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MONTHLY REPORT

OF

THE AGRICULTURAL DEPARTMENT

FOR

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MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
Washington, January, 1865.

The present report is the first of the year, and since the return to its monthly issue. In making this change, it becomes necessary to say something of the times of its publication.

The return day of the circulars, by which information of the condition of the crops, stock, &c., is communicated, is the 1st day of the month, but it is usually the 18th or 20th before all of them are received. It requires from fifteen to twenty days to have the reports printed, folded, stitched, and trimmed. This time cannot be shortened until the war is over. A monthly report cannot, therefore, be published, with this delay, each month, for the circulars. It often, too, requires a week or more to prepare the tables that are based on the circulars. This time will be required to make up the tables from the general one published in this report relative to the yield per acre of the different crops, and their prices. Hence, often the subject-matter of one report must be extended to the subsequent one, and by not delaying for the returns of circulars in the preparation of the latter, it may be so far hastened as to allow the publication of the two reports within the two months. The time of the publication of the one will be at the end of the month, as this one for January, and of the succeeding one as for February, about the 20th of that month.

The present report may be regarded as indicating the general character of the monthly reports for the present year. The leading article will be strictly an agricultural one, and on that subject, the immediate notice of which circumstances render necessary, so that the farmer, at the present season, may immediately apply the information communicated in the practical operations of the farm. Subjects so considered will not have that completeness found in the essays of the annual report, and, therefore, will not preclude their consideration in the annual volume. Besides the leading article, there will be shorter ones on topics more general, but still connected with the interests of agriculture. There will also be the usual statistical matter, but fuller and more methodically presented than heretofore. The meteorological reports from the Smithsonian Institution will be continued.

The principal article in the present report is on the cultivation of the hop plant, a subject that has attracted much attention on account of the high price hops have commanded during the fall and winter. The statistical information in this article will be interesting to the hop-grower, and to those about to engage in its cultivation there is other information of interest.

The education of the industrial classes is at present engaging much attention on account of the establishment of the industrial colleges provided for by the donation of Congress, now being considered by the several State legislatures. The views of one so well known as Governor Andrew, of Massachusetts, on the education of the industrial classes, which will be found in the second article, will be interesting to all.

The third article will receive the attention of all wool-growers, for the success of Mr. Potter, as stated in his letter, and the inducements to the increase of sheep husbandry in the prospective markets, will encourage every farmer.

The statistical matter is fuller than usual, as the close of the year enabled the full returns to be given of much of the commerce of 1864.

In thus referring to these reports, it will not be out of place to acknowledge my thanks for the many kind notices that have been made of them. Their influence is constantly becoming more general, for the reports of the crops and farm stock are seen to be reliable. The time has passed when the plan adopted by this department for estimating their amounts might be regarded as an experiment only. It has been tested, and however disturbing to agricultural production have been the circumstances of war and the vicissitudes of the seasons, yet the plan, thus tested, has been successful even much beyond the anticipations of the most sanguine. This success both the producer and purchaser see, and from both have I received the commendations referred to. It would be but an unkind return and an affected indifference on my part not to acknowledge my gratification at this expression of approbation. This department had no model by which it could be directed when established, but it was created upon the mere belief that it would promote the greatest interest of the nation—that of agriculture; but the measures by which it could advance these interests were never designated. Under such circumstances, to receive this general approval cannot but be gratifying to me, and the terms in which this commendation has been conveyed to me call for this notice of the kind wishes expressed.

And not less universal has been the approbation given to the annual report for 1863, recently distributed. It is regarded as even superior to the report for 1862, and not a single exception has been taken to any opinion or statement given in it. The care demanded in the selection of contributors, and the knowledge, both agricultural and critical, necessary to render such a volume complete, cannot be understood save by those who from experience know how much of both is essential to success.

ISAAC NEWTON,
Commissioner.

THE HOP PLANT.

Inducements to its cultivation; the soil and manures best adapted to its growth; its enemies and diseases; its cultivation; its picking, drying, and packing.

The heavy taxes on alcoholic liquors point to an increased home production of malt liquors. The present high price of hops is creating inquiry on the subject of hop production. No crop is subject to so many casualties, and none, to avoid or mitigate them, demands as high cultivation. Under such circumstances, and especially in the absence of any article on the cultivation of the hop for several years in the Annual Report of this Department, it becomes necessary to consider it now in the Monthly Report.

In so doing, will be noticed the inducements to its cultivation; the soil and manures best adapted to its growth; its diseases and enemies; its cultivation; its picking, curing, and packing.

1. *Inducements to its cultivation.*—The uncertain nature of this crop has led to a greater fluctuation in prices than of any other farm product.

The following table of the annual range of prices since 1850 will show this:

Years.	Prices.	Years.	Prices.	Years.	Prices.
1850	22 to 60 cents.	1855	4 to 10 cents.	1860	6 to 32 cents.
1851	17 to 47 "	1856	4 to 12 "	1861	13 to 23 "
1852	17 to 40 "	1857	4 to 10 "	1862	.....
1853	22 to 46 "	1858	8 to 18 "	1863	15 to 30 "
1854	5 to 36 "	1859	6 to 25 "	1864	20 to 52 "

These are the New York prices, as given in the Finance Report of the Treasury Department for 1863. They show more the differences in price of different months than of the different qualities of the hop. No other product is so fluctuating. This is attributable to three causes chiefly—the irregular annual production, the irregular foreign demand, and the speculation which these irregularities occasion. The irregularity of the annual production can be seen in the table of this product for New England, prepared for the State Agricultural Society of New Hampshire by W. P. Riddle, and published in the Patent Office Report for 1853. The fluctuations in the amount of the crop from one year to the next range from 25 to 100 per cent.

Mr. Rouse, of Oneida county, New York, referring to this difference, says: "Very much will depend on the season; this year, for instance, has proved to be very unfavorable, the yield being only about one-third of a full crop. One hop-grower of my acquaintance has obtained but 12,000 pounds from grounds which last year produced 32,000; and another has only 4,000, where last year he obtained 16,000. The universal complaint is that the crop has been very light. Taking one season with another, the range of different fields is from 400 to 2,000 pounds to the acre. Instances have indeed occurred occasionally in which the latter quantity has been exceeded, and in one instance an average of near 2,800 pounds was obtained. One thousand pounds per acre may be considered a fair crop; but the general average would, no doubt, fall below that, and would probably be about one pound per hill, or 888 pounds to an acre."

Such an irregular production necessarily creates speculation, especially so in this crop, as hops cannot be held over for more than a year without much deterioration in their quality.*

* This deterioration is occasioned by the volatile nature of the aroma of the hop. The most compact packing will not retain it, and hence it would be well to institute experiments of the cost and effectiveness of baling with strong hemp-cloth, gummed with Indian-rubber.

The irregularity of the foreign demand is as great, and occasioned by the fact that the hop in England and the continent is even more uncertain than it is here.

The following table shows the number of acres, in hops, in the years named, and the pounds produced. Those years only are given which exhibit the greatest extremes, but even where the annual production is more regular, it is nevertheless very irregular.

Year.	Acres.	Yield per acre.	Year.	Acres.	Yield per acre.
1807	38,218	586 pounds.	1823	41,458	124 pounds.
1808	38,436	1,465 "	1824	43,419	795 "
1809	38,357	360 "	1825	46,718	120 "
1810	38,265	368 "	1826	50,471	1,237 "
1811	38,401	927 "	1839	52,305	911 "
1812	38,700	141 "	1840	44,058	127 "
1822	43,776	1,037 "	1841	45,769	697 "

From 1841 to 1850 the yield was more regular, being about 896 pounds per acre.

A crop so extreme in its annual product necessarily caused an irregular demand on the part of Great Britain for foreign hops. Its imports are seen in the ollowing table.

Import of hops by Great Britain.

Years.	Pounds.	Years.	Pounds.	Years.	Pounds.
1850	725,648	1855	2,762,144	1860	7,718,816
1851	51,744	1856	1,790,544	1861	16,707,712
1852	34,608	1857	2,095,632	1862	14,984,592
1853	4,742,528	1858	1,456,000	1863	16,495,472
1854	13,330,480	1859	248,640	1864*	7,628,768

* For ten months only.

The exports of the United States show a like irregularity. They are as follows:

Exports of hops by the United States.

Years.	Pounds.	Years.	Pounds.	Years.	Pounds.
1850	1,275,455	1855	4,021,816	1860	273,257
1851	110,360	1856	1,048,515	1861	8,835,837
1852	238,008	1857	924,538	1862*	.....
1853	245,647	1858	458,889	1863*	4,415,400
1854	260,026	1859	587,953	1864*	5,081,800

* Estimated at 200 pounds per bale, the returns being in bales.

Here is a great fluctuation, and in 1861 a most extraordinary export. The entire crop of the United States, as returned by the census, was as follows: 1840, 1,238,502 pounds; 1850, 3,497,029 pounds, and in 1860, 11,010,012 pounds. There must have been a most wonderful increase in 1860 and in 1861 of our hop crop, or else we exported in 1861 nearly the entire amount produced.*

* The estimated crop for 1862 is 16,000,000 pounds, and for 1863 and 1864, 13,000,000 pounds each year.

These striking irregularities of production and export fully account for the extreme range of prices. They inculcate this lesson to the hop-grower, that he must expect markets at one time most encouraging, and at another most depressing. But the question is, Does the *average* price of several years justify the increased cultivation of this crop?

In Great Britain the average yield is probably about 750 pounds per acre. Mr. Rouse places it in this country at 888 pounds. He estimates the entire cost of production at about 10 cents a pound, including the picking. This would be about $88 80 per acre. This cost will be larger or smaller according to the natural fertility of the soil, the cheapness of poles, and the price of labor. But if this estimate is an average one generally, then the hop can be grown for 15 cents per pound in ordinary times and at the usual prices of labor.

2d. *The soil and manures best adapted to its growth.*—These can best be determined by the nature of the plant and its analysis. The roots of the hop penetrate deeply and widely, and are liable to suffer from drought. In a climate of extremes, like ours, this drought must be guarded against, and this can best be done by having a large portion of vegetable matter in the soil, which is a non-conductor of heat, and attracts and retains moisture. It should be broken up deeply, and always kept thoroughly pulverized. It should be deep, that the lower roots may sustain the moisture of the plant in drought, and it should be well pulverized, for in such a condition of the soil air cannot dry it deeply, because it does not crack and admit large amounts of heat, and the subsoil moisture rises higher between fine particles of loose soil. This plant is a great exhauster, both by reason of the thorough summer cultivation demanded, and by what it abstracts from the soil. Analysis shows this; and the following is an English analysis of the hop.

	ANALYSIS OF THE HOP.			OF WHEAT AND WHEAT STRAW.	
	Hops.	Leaves.	Bine.	Wheat.	Straw.
Percentage of ash calculated on dry substance	9.00	21.94	7.28	.....	.....
Composition of the ashes.					
Silica	19.16	22.35	9.99	1.27	65.38
Chloride of sodium	0.74	3.12	2.63	.....	.....
Chloride of potassium	8.96	2.29	15.35	.....	.....
Soda	.....	.....	.....	9.05	0.16
Potash	31.70	13.13	17.60	23.72	13.44
Lime	9.59	30.78	23.91	2.81	6.70
Magnesia	4.80	4.84	3.77	13.03	3.82
Peroxide of iron	0.68	0.19	0.80	.....	.....
Sulphuric acid	5.10	1.89	2.33	0.24	5.82
Phosphoric acid	17.33	9.33	11.69	49.81	3.07
Carbonic acid	1.92	12.04	11.92		
Total	99.98	99.96	99.99		

In this table the analysis of wheat is given also as a comparison, because it is conceded that good wheat lands may be made good hop lands. Silica in larger quantities is taken from the soil by the hop, where the straw of both crops is returned to it. Both have nearly the same amount of potash and soda; but the hop has much more lime and sulphuric acid, and much less magnesia and phosphoric acid. The aggregate pounds per acre do not differ materially in

these crops, estimating the number of pounds of hops at 900 per acre, and of wheat at 15 bushels, equal to 900 pounds.

The chief difference is in silica, lime, and sulphuric acid. Hence it follows that gypsum, or plaster of Paris, would be a beneficial manure for hop grounds, because it is sulphate of lime. It is composed of lime 32.56, sulphuric acid 46.51, water 20.93. Its best mode of application would be on clover after it has commenced its spring growth, for in this way it would add much to the vegetable matter of the soil, as well as to its lime and sulphur. The crop of clover should, of course, be turned under.

In Great Britain it is usual to trench the ground with the spade; here it is an unnecessary expense. "Very deep trenching for hops," says Morton's Cyclopædia of Agriculture, a Scotch work, "even when the top soil is not buried deeply, is by no means advisable, provided there be no pan-table or incrustation below." Eighteen inches is usually a sufficient depth. It may be stated as one reason for not burying the surface mould very deeply, that, although the main roots of the hop penetrate to a great depth, yet that the smaller rootlets, with their spongioles, run only just below the surface, and the manuring ingredients are continually washing downwards. We have also pretty good grounds for believing that rich soil buried deeply becomes inert."

If the soil requires manuring and deepening, this should first be done by the gypsum-dressed clover turned under to the depth of ten inches. When broken up to plant the hop roots, it should be subsoiled an additional depth of eight inches. Trenching with the spade is a useless waste of labor where the plough can be used, and hops should not be planted where it cannot; for, as the hop demands a loose, deep soil, it would soon be washed away on hill-sides.

Barn-yard manure should always be applied during the cultivation of the crop, and even before, if the soil is not rich. In Great Britain alluvial soils are regarded as excellent; and clay soils, especially if tenacious, should be thoroughly drained, for a plant so deeply rooted as the hop should not have its lower roots imbedded in standing water.

The situation of the hop-field should be free from heavy winds, as they blow down the poles, but it should be well aired and sunny. The reason of this will be seen when speaking of the disease of mould.

3d. *Enemies and Diseases.*—We have seen how uncertain the hop crop is. This is chiefly owing to its enemies and diseases. In England these are numerous; but here it will not be necessary to notice but one of each—the *aphis*, or *louse*, and the *mould*. They will be noticed at some length, however.

1. *The Aphis.*—The correspondents of this department, in speaking of the injuries received by the hop crop of 1864, describe these insects, so common to many plants, and speak of them as *lice*. The following description of them is given by Mr. Harris:

"The winged plant-lice provide for a succession of their race by stocking the plants with eggs in the autumn. These are hatched in the spring, and the young lice immediately begin to pump up the sap from the tender leaves and shoots, increase rapidly in size, and in a short time come to maturity. In this state it is found that the brood, without a single exception, consists wholly of *females*, which are wingless, but are in a condition immediately to continue their kind. Their young, however, are not hatched from eggs, but are produced alive, and each female may be the mother of *fifteen* or *twenty* young lice in the course of a single day. The plant-lice of this second generation are also wingless females, which grow up and have their young in due time; and thus brood after brood is produced, even to the seventh generation or more, without the appearance or intermixture, throughout the whole season, of a single male. This extraordinary propagation ends in the autumn with a birth of a brood of males, which in due time acquire wings, and pair; eggs are then laid by the

females, and with the death of these winged individuals, which soon follows, the race becomes extinct for the season."

The eggs are not destroyed by cold or wet; and drought is favorable for the multiplication of those lice born in the summer, and wet unfavorable. Hence their rapid increase in droughts. The effects of the attack of these lice on the hop-vines is thus described in Morton's Cyclopædia of Agriculture:

"When the first attack of these upon the hops is severe, and early in the season, the growth of the plant is commonly stopped in the course of three or four weeks. If the attack be late—that is, about midsummer, or afterward—the bine has then attained so much strength that it struggles on against the blight to its disadvantage, and the result is a total failure of the crop at last; for the leaves fall off, and the fruit-branches being already formed, there is no chance of recovery. At this time and in this condition the stench from the hop plantation is most offensive. In an early blight, however, we have many instances recorded of extraordinary recoveries; for these insects are remarkably susceptible of atmospherical and electrical changes, and on a sudden alteration of the weather we have known them perish by myriads in a night. The condition of a plant is never hopeless, however severe the attack may be, provided there is *time* for it to put forth its lateral or fructifying branches."

The progress and termination of the attack by the lice, when severe, is thus described in the same work.

"Their multiplication is so rapid that the leaves become so thickly covered as scarcely to allow a pin to be thrust between them. They quickly abstract the juices of the bine, so that the leaves assume a sickly brown hue, and curl up, and the bine itself ceases to grow, and falls from the pole, the lice continuing till they perish for want of food; and thus, without the intervention of a favorable change, the crop is destroyed, and the grower may often consider himself fortunate if the plant recover a due amount of vitality to produce a crop in the following year.

"When atmospherical change occurs, the lice die off by thousands in a day. As they die they turn a brown color. The first indication of a favorable change is the clustering of the lice to the extremities of the bines and branches. This fact is well worthy of notice, since, to all but close and accurate observers of the hop plant, the outward appearance is the reverse of a favorable change; for the small leaves and heads of the bines are densely covered with lice. But while the lice are thus gathering in countless myriads at the extremities, apparently threatening the utter destruction of the plant, the large leaves at the bottom of the bine and the leaves of the branches next the stem are becoming clean. At this *clustering* period the lice evidently cease to suck the juices of the plant; for the attentive observer will perceive the bine resuming its erect position, and recommencing its upward growth, though still covered with lice. At this crisis they usually disappear altogether in the course of a week or ten days, *and then the plants should be liberally rewarded, if not lavishly stimulated with manure, there being no danger of over-manuring under such circumstances.*

"The best manure to be employed in these cases is guano, at the rate of 450 to 900 pounds per acre. The ground should be continually stirred, but this stimulus should not be given until it is certain the lice are disappearing."

Injurious insects are much lessened in number by natural enemies. That which is most destructive of these lice is the lady-bug, or, as called in England, the lady-bird. Of these the work just quoted from says:

"They, in the first instance, destroy multitudes of lice, a single one killing eight or ten in as many minutes; and where the lice are not too numerous, the lady-birds will clean the hop plantations. But, generally, the lice have time to deposit some of their young on the under side of the leaves before their enemies attack them, especially if the weather be clouded, when the lady-birds are slug-

gish and inactive. The lice are seldom devoured at this time, but the lady-birds lay their eggs also on the under side of the leaves, usually in clusters of about twenty each. These eggs adhere to the leaves, are yellow in color, and of a long, oval shape; they are soon hatched, and the progeny which creeps forth is the 'black nigger' or 'serpent,' as they are called in the districts. They are ferocious-looking creatures, greatly resembling in shape, though not in size, the lizards of the olden time. As soon as they are hatched they commence the work of destruction upon the lice, which are their peculiar food, as the lice are of their parents, the lady-birds; and if the lice are not extremely numerous, they often succeed in clearing the plant of the vermin, otherwise they devour them until they are literally gorged with food, and then, attaching themselves to the leaves of the hop, after remaining dormant in the larva state, they cast off their outer cuticle, and are transformed into the perfect lady birds, when they again pursue their good work of destroying the enemies of the hop—consuming about thirty lice daily."

We have described the depredations of the lice, and the good work of the lady-bugs, at some length, that the hop-grower might see the necessity of two things—*first*, having the ground in the highest condition as to richness and tillage, that the plant may be enabled to over come the attack of the lice; and, *second*, that he might see the necessity of preserving the lady-bug, one of the most useful of the beneficial insects. The lice could be destroyed by syringing the vines with whale-oil-soapsuds, but this remedy is too tedious for hop cultivation.

2. *The mould.*—There are various diseases to which common parlance has given this name, but the one now described is the most fatal to the hop. These diseases, like the lice, are parasitic, that is, both exist upon the juices of the hop plant, which, being deprived of them, are blighted. Hence the term *blight* does not designate the *cause*, but the *result* of the attack of the disease or insect. Morton's Cyclopædia of Agriculture thus speaks of the disease now under consideration:

"The mould is a disease rather than a blight. We believe it to be a parasitical vegetable fungus, usually generated in wet seasons and in damp situations. It is of all diseases the most dreaded by the hop-grower, inasmuch as there is no known remedy for it, and as it steadily progresses in its attack, with more or less rapidity, according to the character of the season, till the crop is gathered. It often originates from the negligence and inattention of the cultivator, and thus prevention is better than cure. It is intimately allied to, if it be not precisely the same, as the white mildew which we see in hawthorn hedges, and on rose-bushes, especially if the latter grow in shady situations. When the mould appears to any considerable extent upon the hops so early as the end of June or beginning of July, however luxuriant the vine may then appear, there is no hope of a crop worth picking. Dampness and a want of a free circulation of air and light seem to be the predisposing cause of mould, and thus we often see it emanate from wild hops, which are carelessly allowed to grow in neighboring hedges. As soon as this violent disease appears, it spreads in every direction with astonishing rapidity, diminishing in intensity as the distance increases from the centre of mischief. It is first noticeable upon the upper side of the leaf as a white speck, not larger than a small pins head, the spot increasing in size till it attains the diameter of about one-eighth of an inch; below this white spot, on the *under* side of the leaf, there is a corresponding indentation, which renders this incipient indication of mould unmistakable. From the spots on the surface of the leaf the seeds of this parasitical fungus, as we imagine it to be, are blown in all directions, and the minutest particle of this white dust when it settles on another leaf in a few days becomes a minute speck of mould. Each new spot then propagates the disease, and thus we perceive this vegetable pestilence advances with fearful rapidity of geometrical progression, and if the season be

damp, acre after acre falls a victim to the attack, which often originates from sheer inattention."

Mould spreads fastest in warm, damp weather. It commences near the ground, and therefore great attention ought to be paid to the frequent pulling off of the suckers, as they sprout through the hill in the summer months. Every spotted leaf should be destroyed. And here we now see the necessity of making such selection of the site of the hop plantation as will secure a free access of air and sunlight, for dryness is a check to this disease.

4. *Cultivation.*—Supposing the ground to have been properly prepared for setting out the plants, and that they have been grown one season from the slip, the first step is to determine the number of plants to the acre. The width of the hills, in Great Britain, varies according to the varieties of the hop—the stronger growing ones requiring more room. From six to eight feet square is the customary distances, and in the United States seven feet is the usual distance. The following table shows the number of plants required for the distances named.

6 feet	1,236 plants.
6 feet 6 inches	1,060 "
7 feet	888 "
7 feet 6 inches	795 "
8 feet	695 "

By having a white rag or other conspicuous object on the chain or measuring cord at the distances desired to form the hills, the places to set the stakes will be more readily indicated. These stakes should be of sufficient height to correct the range by.

Male and female plants.—The sexes of the hop plant are not united in the same plant, but some are male and others female. Since the sexual relation of the strawberry plants have been so thoroughly discussed in the United States, the importance of having some male plants in the hop grounds will be generally admitted. The male flower grows in a loose panicle, whilst the female flower is compact, like the cone of the pine tree. Hop seeds produce plants, but as they are like fruit seeds, producing varieties of quite different qualities, the hop plants should be multiplied by slips from a well-known and approved variety.

Although most of American farmers have some knowledge of the importance of having enough male among the female plants to fertilize them, yet this importance is so peculiar in the hop that some special reference to it is necessary.

At the base of each scale or leaf of the female blossom of the hop there is a flower, in which is the germ of the seed. As this seed matures the scales grow larger, and are covered with resinous aromatic balls, called *lupuline.* These are the fine yellow powder of the hop, and contain that bitter principle which renders the hop so valuable in preserving and flavoring malt liquors. This bitter principle is stronger or more delicately flavored in some varieties of the hop than in others, and in proportion as the seed is fully developed. This female blossom is vitalized by the pollen of the male plant. "Though the pollen," says an English writer, "from its extreme lightness, can be wafted to a considerable distance and some seeds in each cone may be so fertilized, yet it would be well to rear a number of the male plants among the others, or along the hedges of the hop gardens, to insure the fertilization of all the seeds. A bushel of hops collected from plants of the fourth year, raised from seed, weighed 36 pounds, there being male plants near; a second instance, where the plants were raised from cuttings, weighed 35 pounds; while a bushel, grown in a garden where the male plants were always eradicated, weighed only 22 pounds. Besides the greater quantity of hops thus obtained, the aroma is much greater (the *lupuline,* on which the aroma depends, is considered by Blanché to be the unappropriated pollen dust which has alighted on the scales of the females) and the strength of the bitter much greater."

On this point, M. Rouse says: "It is necessary that a small number of the male plants should be interspersed among the others, in order to give that energy and vitality to the seed which is essential to the perfection of the crop. If due care is taken in this particular, a seed will be found at the bottom of each petal of the blossom possessed of a most pungent aromatic flavor. Attention to this particular is, indeed, necessary to insure flavor and character to the product of the plant, giving it that fine aromatic bitter which is most desirable, and which it will not otherwise be possessed of; the petal, or leaf of the blossom containing comparatively but little of the astringent quality of the hop. This consideration is one which I apprehend is too frequently overlooked by the inexperienced cultivator, who sometimes rejects the male plants as barren to the great injury of his crop." He recommends one male plant to fifty female.

In selecting the varieties of the hop to plant, two things are regarded in Great Britain—the flavor and the time of maturing. The strong growers are usually the largest bearers, but have not that delicacy of aroma that is found in smaller and less prolific varieties. In large plantations where the picking season should be long, such varieties are selected as will give different times of maturity.

The number and length of the poles.—Each hill should have two poles. In England, the number is determined by the kind of hop. The Farnham Canterbury white bines and the goldings are strong growers, and require large poles—from 14 to 20 feet long. The grape varieties are smaller, and need poles not exceeding 10 to 14 feet in length. The Cyclopœdia of Agriculture, as to the number of poles in Great Britian to the hill, says: "When there are about 1,200 hills on an acre, and the poles all 18 feet long and upwards, we should recommend *two* to each hill, with 16 feet poles, every *third* hill to have three; with 14 feet, alternately *two* and *three* poles; with 12 feet poles, *three* to each hill." But in this country, where ground is not so valuable as in England, a lesser number should be used, that more air and sunlight may be allowed, to lessen the evil of mould, and give greater vigor to the plant when held back by the aphis.

The poles should be sharpened with a regular taper, and holes for them made by a heavy crow-bar; and when two are in a hill they should be about a foot apart, the tops inclining somewhat apart, to give more room to each top, and prevent the branches from intertwining. The strongest poles should be selected for the outside, especially for that part of the plantation most exposed to heavy winds.

In the spring the number of bines to each pole is selected. These should not be more than two; but it is best when the wire-worm is apprehended to reserve two more against their depredations, and until danger of them is past.

The bine should be fastened to the poles, as their growth advances, with woollen yarn; and it is best when unravelled from a stocking, as it is more elastic. Women and children can do this work.

As to the cultivation, it may be laid down generally, that what is required by Indian corn should be given to the hop. When the ground is dry enough in the spring, it should be broken up deeply, and followed, from time to time, by the cultivator. Should there be any weeds about the hills, the hoe should be used to destroy them. If the hills have been manured in the fall, it should be forked in in the spring. Be the character of the season what it may, the soil should be kept loose and free from weeds and grass. On the subject of cultivation, both as to implements and the number of ploughings, we commend our readers to the article on Indian corn, published in the Patent Office Report for 1861.

Picking, drying, and packing.—We cannot give better directions on these matters than are contained in the article of Mr. Rouse, in the Patent Office Report for 1853:

"The hops having reached maturity, or nearly so, the operation of picking commences. This, to have the fruit in full perfection, should not be done until it is ripe: at which time the seed will be found to have changed from a bright straw color to a pale brown, and will emit a fragrant smell. With us hops are usually ripe about the 5th of September; but as it is better they should be harvested rather green than be permitted to stand till over-ripe, liable to be injured by the early frosts, and as they cannot all be gathered at once, it is necessary in large fields to commence somewhat earlier—usually about the first of September—in order that the work may be completed in season. The picking is usually done by females. For this purpose girls are frequently engaged several months, and even a whole year, in advance.

"The hops are commonly picked in large boxes, containing from twenty-four to forty bushels. These boxes are divided lengthwise by a thin partition, and then subdivided into quarters. They are raised a little from the ground, and have handles at the ends to facilitate their removal from place to place, as may be desirable. One man and four girls are allowed to each box. Each girl deposits the hops she picks in her own division of the box. An industrious hand can pick twenty bushels in a day without difficulty. It is the business of the man to supply the boxes with poles, which he raises from the ground as needed, cutting the vines about a foot high; to see that the picking is properly done, to remove the empty poles, clear them of the vines, and stack them in a systematic manner. In picking, the hops should be kept free from stems and leaves, and all blasted or immature ones should be rejected. The boxes should be emptied at least once a day; at all events, no hops should be left in them over night. It is of great consequence that they should be dried as soon as possible after they are picked, as they are quite liable, if left together in any quantity, to heat and spoil in a few hours. They may be most conveniently conveyed from the field to the dry-house in large sacks.

"*Drying.*—The hop-house, or kiln, should be of a size proportionate to the quantity of hops to be cured, so that they may not accumulate on hand. To avoid this, it will generally be necessary to keep the kiln heated both day and night. It is commonly built of an oblong form, and of two stories, the lower part being occupied by the kiln and the press-room and the upper part by the drying-floor over the kiln, and by a room of about an equal size for storing the dried hops, which will of course be over the press-room. Kilns are sometimes built of bricks or stone, of a circular form, with a round opening in the apex of the roof, surmounted by a movable cowl, or swinging ventilator, to enable the vapor of the drying hops to escape easily. If the building is of wood, the sides of the kiln should be lined with brick-work, or thoroughly lathed and plastered. It is found to be most convenient and economical to heat it with stoves, from two to four of which will be necessary, according to the size of the kiln. The drying-floor should be ten feet from the ground, that there may be no danger of scorching the hops in drying. This floor is formed of slats about one and a half inch in width, and the same distance from each other. These are covered with a strong coarse cloth, of open texture, so as to admit of a free transmission of the heated air from the kiln below. The drying-room should be of comfortable height for a person to work in it, and the sides should be lathed and plastered, that there may be no irregularity of the heat in different portions of the room during high winds. A good ventilator should be provided in the roof, as described above. Openings should be left in the walls near the bottom of the kiln to admit fresh air from without, the draught to be regulated by means of flues, or sliding doors. The cloth for the drying-floor should be well stretched over the slats and firmly nailed. On this floor the hops are spread to the depth of six or eight inches. The proper thickness will depend somewhat on the condition of the hops; if they are very full of moisture, they should be

laid on quite thin; but if gathered when fully ripe, and in fine weather, a depth of ten inches will be allowed.

"The hops being spread as evenly as possible, the fires are immediately kindled in the kiln, and the temperature regulated to one uniform degree of heat. This, however, may be quite high at first, as there will be at that time but little danger of scorching the hops if the floor is sufficiently high. If the hops are rusty, or discolored from any other cause, it is usual to burn a little sulphur under them, which will bring them to a uniform appearance. This is done as soon as the hops are well warmed through, and feel somewhat moist. Great prejudice formerly existed against the use of sulphur in drying hops; but no objection is now made to it by the brewers, and it is generally thought that the use of it improves the appearance of all hops, and that it also facilitates the drying.

"During the drying process the fires should be kept up, and there should be a free supply of fresh air below, sufficient to keep up a regular succession of heated air from the kiln, passing through the hops and out at the ventilator, carrying with it the vapor expelled from the drying hops. This will be found far preferable to a still, dead heat. As soon as the upper part of the hops appear to have felt the fire, the lower part may be considered as nearly dry, and will rattle a little. The heap may then be turned. Before this is done the heat should be suffered to abate a little, and increased again after the turning is finished. I am aware that many do not turn their hops while drying, nor suffer them to be disturbed at all until they are ready to be removed from the floor. Still, the better opinion, I think, is in favor of turning as tending to facilitate the drying and render it more perfect by the more effectually exposing every portion of the mass to the action of the heated current of air, than would be the case were they allowed to remain as first deposited on the floor, containing many inequalities in density even when the utmost care is exercised in their distribution. If turned at the right time, and in a careful manner, there need be no injury done to the hops. When sufficiently dried they should be allowed to cool off a little, if time can be afforded, otherwise there will be great danger that they will break in moving, or a portion of them shell off and waste. Ten or twelve hours are required to dry a kiln of hops. Two kilns may be dried in twenty-four hours by keeping the heat up through the night. A twenty-foot kiln will thus dry 400 bushels in a day, as they come from the vines, making about 750 pounds of hops when dry.

"*Baling.*—The hops being dried, the next process is to bale them. This should not be done immediately after they are taken from the kiln, but they should be allowed to lie a few days in the store-room till they become a little softened, otherwise their extreme brittleness will cause them to be much broken in baling, and the sample be thereby greatly injured. The bales should be of symmetrical and convenient form, and should contain about 200 pounds. They are formed in a box or bin prepared for the purpose, in the press-room, of such shape as will give the desired size and form. Across the bottom and sides of this box the baling cloth is first laid, and the hops are then let down into it from above, and trodden down as they are dropped in until it is filled. Another cloth is then carried over the top, a follower applied, and the screws of the press turned down upon it until the whole is brought into a compact mass. The box is then taken apart, the cloth neatly secured round the bale, the screws are run up, the bale taken out and the ends cased, when it may be considered finished, and the same process is repeated in forming another."

GOVERNOR ANDREW, OF MASSACHUSETTS, ON THE EDUCATION OF THE INDUSTRIAL CLASSES.

Of the official notices made by the executives of the different States of the donation by Congress for the establishment of industrial colleges, we admire and approve most that of Governor Andrew, of Massachusetts. It exhibits such genuine sympathy for the industrial classes, such a just perception of the extent of the instruction they should receive, and such correct ideas of the mode by which that instruction may best be given, that we cannot but notice his recommendations, and the sentiments expressed by him as Governor in his messages, and in his recent address to the New England Agricultural Society.

In his message of January 9, 1863, the governor thus sketches the character of the college that should be established:

"An institution requiring 'military tactics,' and 'such branches of learning as are related to agriculture and the mechanic arts,' to be taught 'without excluding other scientific and classical studies,' must of necessity, to be worthy of Massachusetts, involve large expenditures, and demand an assemblage of men of the highest talents as teachers. For although agriculture was the first art invented, it must be the last to be brought to perfection, since it requires contributions from every branch of natural science, and aid from every other art. We shall not use the grant of Congress wisely if we make of it simply a means of giving farmers' sons such an education as they could obtain by living on a well-managed farm and attending an ordinary high-school. It must be made the means of a positive increase of human knowledge in the departments bearing on agriculture and manufactures, and the medium of teaching not only farmers, but those who shall become teachers and improvers of the art of farming."

Referring to European schools of a like character as those contemplated in the act of Congress, he says:

"The Central School of Arts and Manufactures, in France, counts forty professors and teachers. The Conservatory of Arts and Trades has a number not inferior, and has also three subordinate or auxiliary colleges in the provinces. The Polytechnic School of Vienna has fifty-eight instructors."

The colleges indicated by the act of Congress are spoken of very often as to be agricultural only. This is not the case; but that body had clearly in view the education of *all* the industrial classes—the mechanic, the manufacturer, the merchant, and a class almost new to this country because of its vast internal commerce, not yet named, but whom we shall designate as the transporter—those engaged in the carrying trade both on land and the ocean.

The educational wants of these have been sought to be provided for by the establishment of commercial colleges, schools of design, institutes of technology, &c., &c. The establishment of so many different institutions has been attended with the usual fate of American colleges: few have had the patronage to sustain them, and still fewer have had the means to properly instruct in the limited branches they professed to teach for want of that museum, apparatus, and library essential to a profitable instruction in the sciences.

These difficulties led to a report to the Massachusetts legislature in 1851,

by Professor Hitchcock, who had examined the agricultural institutions of Europe, on the educational wants of the industrial classes. Governor Andrew, referring to this report, and to the institution recommended by it, says:

"The following pregnant suggestion, looking forward to an institution of wise and liberal breadth, and of true public economy like that which our act of Congress indicates, illustrates the comprehensiveness as well as the carefulness in observation of this report. 'By the addition of a single professorship of technology,' says the report, 'to such an institution as has been described, and extending the collection of instruments to those of every art, this school might become a school of sciences as well as of commerce and manufactures, and thus afford an education to the son of the mechanic and merchant as well as the farmer.'"

Views of this nature, looking to the wants of *all* the industrial classes, thus presented, and urged by leading writers whose sympathies were with these classes, led to the passage of the act of Congress. The clear intent of that act is to provide an institution for all—not for separate institutions for each, much less for a simple professorship of agriculture in existing colleges. Governor Andrew, referring to the donation in this act, and to the policy of adding to it by concentrating other resources for the instruction of the industrial classes, says:

"The act of Congress does not make provision sufficient for an agricultural school of the highest class in each State. Nor would it be possible now to find, disconnected from our colleges and universities, as many men of high talent, and otherwise competent, as would be required to fill the chairs of one such school. But Massachusetts already has, in the projected Bussey Institution, an agricultural school founded, though not yet in operation, with a large endowment, connected also with Harvard College and the Lawrence Scientific School. She can therefore, by securing the grant from Congress, combining with the Institute of Technology and the Zoölogical Museum, and working in harmony with the college, secure also for the agricultural student for whom she thus provides, not only the benefits of the national appropriation, but of the Bussey Institution also, and the means and instrumentalities of the Institute of Technology, as well as those accumulated at Cambridge. The benefits to our State, and to our country, and to mankind, which can be obtained by this cooperation are of the highest character, *and can be obtained in no other way.* The details of the connexion of the Bussey Institution with the Scientific School and the College, are not yet fully wrought out; but I apprehend that little difficulty would be found in connecting it also with the grant from Congress, if the gentlemen who may be intrusted by the State with the work will approach it with the perception of the absolute necessity for husbanding our materials, both men and money, and concentrating all our efforts upon making an institution worthy of our age and of our people. Its summit must reach the highest level of modern science, and its heads must be those whom men will recognize as capable of planning a great work, and of working out a great plan."

This recommendation of union, and by it of strength, was made in order to avoid "the prevention of all the waste of means, the weakening of all resources, the repetitions of professorships, libraries, apparatus, and other material, consequent on scattering instead of concentration."

These recommendations were the result of the lofty conception which Governor Andrew had of the present and the future of the industrial classes. Urging this union of the educational resources of Massachusetts, he says:

"Regard a moment your positive wealth. Consult its wonderful growth. Remember that you owe all of it to *cultivated, instructed, intelligent industry.* You have conquered, by first understanding nature. You have studied her mysteries, guessed her secrets, and thus unlocked her treasures. And doubt not that in the wonderful future about to dawn upon our country, the part you are to enact of beneficence and glory, under the inspiration of your generous culture and expanding thought, will transcend all the former achievements of your industry, and will outshine the lustre of your arms."

In his more recent address to the New England Agricultural Society, the Governor thus, more in detail, alludes to that labor, for which he justly claims so great a future:

"The needlewoman, by the domestic hearth, or in the shops where labor associates with capital, aided by the sewing-machines—one of the last, best gifts of mechanical invention to women, if not to men; the weaver, by the side of her carpet-loom, which seems to *think* as well as to work, and which almost talks; the shoemaker, pegging a boot at a blow; the laborer, who fills his gravel-car by two strokes of a steam-shovel, and upsets it by a turn of his hand; the husbandman, who mows and rakes his hay, and reaps, and threshes, and measures out his golden grain by the agencies of cunning mechanisms, almost without fatigue, are only a few of the thousand illustrations of how the human will and the immortal intelligence of the human intellect, bridging over the gulf which lies between the boundaries of *matter* and *mind*, are vindicating the divinely-given mastership of man over all things which God hath made on earth. Nay, more than that; for the things invisible and impalpable, existing as hidden forces in the vast abyss of nature—caloric, and steam, and electricity, and magnetism, and light itself; the mysteries of sciences, so wonderful and august that they seem to tread celestial spheres and to sweep the mind bewildered by the contemplation, far off beyond the domain of reason—these, all these, tamed and allured to human uses, are familiar spirits, by whose means a thousand daily miracles are wrought without amazement to the beholder, and with little consciousness of our own how nearly we are brought to the contemplation of the very thoughts of Deity. Those winged horses, harnessed to the plough, the loom, the travelling-car, carrying burdens, crushing ores, hammering granite and iron, or weaving delicate tissues for ornament or luxury, or flashing intelligence by invisible magic, are daily augmenting in number and power, though they had long since added mechanical forces to the industrial strength equivalent to many millions of men."

Thus, mind—"cultivated, instructed, intelligent" mind—creates vast forces; and, regarding it simply as an agent in the production of positive wealth, institutions of learning, which develop it, are the most economical investments that a State can make. Examine its influence with the highest natural talent—over such men as Watt, Telford, the Stephensons, the Brunels, Fulton, Morse, Ericsson, and others—names immortalized by their connexion with the steam-engine, bridges, the locomotive, tunnels, canals and railroads, river, lake, and ocean steam-navigation, and iron-ship construction, the telegraph, and the monitor.

Watt, who perfected the steam-engine, was early sent to a commercial school, studied Latin and the elements of Greek, and mathematics, most diligently; and, when he was fifteen years old, had read twice, carefully, Gravesands's Elements of Natural Philosophy. He was, too, a reader of poetry, of romances, of the publications of the day, and of almost every new book he could procure.

"Telford," says Mr. Timbs, "left his autobiography, with an elaborate account

of his labors for more than half a century, and other valuable contributions to engineering literature. He taught himself Latin, French, Italian, and German. He was the first president of the Institution of Civil Engineers, to whom he bequeathed his scientific books, prints, drawings, &c., and $10,000 to provide annual premiums to be given by the council."

The elder Stephenson, the inventor of the locomotive and the founder of the railway, was deficient in early education; but, says Mr. Timbs, feeling deeply his own want of education, and in order that his son might not suffer from the same cause, he sent him to the best seminaries in the district, making him the instrument of his own better education. This he did by requiring his son to read for him at the library at Newcastle, and bring home his weekly acquirements, as well as frequently a scientific book, which father and son studied together. But so much did he appreciate the value of an education that, at his own charge, he erected a mechanics' institute, and by his own education he raised himself to the presidency of the Institute of Civil Engineers.

The elder Brunel received a collegiate education, and gave especial attention to the exact sciences, mathematics, mechanics, and navigation. His son was still more carefully educated, and was a member by fellowship of the leading scientific institutions of Great Britain.

Looking, then, to the vast material wealth these and like minds have created, who dares contend that the mission of the industrial classes does not demand the most thorough instruction? Compare the laws of man—the common law and equity, the municipal, the commercial, the international—all together—with the laws of nature; how insignificant are they! If the education of the lawyer should be such as fits him for an understanding of the one, that of the industrial classes should qualify them for an understanding of the other.

Let no one mistake great inventions or discoveries as the unpremeditated suggestions of as great genius. The electric telegraph commenced with Franklin: Morse but completed it. So the daguerreotype. The incrustation of surfaces steeped in an acid solution of silver and chlorine was first known in 1777, and in 1801 a solution of nitrate of silver. In 1802 images on such surfaces were obtained by the camera obscura; but those images faded away rapidly when exposed to light. Then Niepce, an amateur French chemist, after ten years' experiments, from 1814 to 1824, succeeded in taking permanent images, but he was ten hours in getting them, and then without certainty. Daguerre experimented till poverty alarmed his wife, whilst Arago believed that science was not yet sufficiently advanced for success. In 1839 that success finally crowned this labor of sixty-two years, in which most conspicuously are the names of Scheele, Ritter, Wollaston, Sir Humphrey Davy, Wedgewood, Niepce, and Daguerre. Continents can be explored only after a Columbus has discovered them.

But inventions and discoveries have no limit. The application of natural laws to the purposes of life is bounded only by the infinitude of those laws. And therefore wisely does Governor Andrew thus address the farmers of New England:

"Deepen and widen the foundation of your seminaries and schools of learning. Encourage genius as well as industry. Invite hither, and hold here, the profound thinkers, the patient students of nature, those tireless watchers who wait upon the stars, or weigh the dust upon an insect's wing. Discard and discourage alike the prejudices of ignorance and the conceits of learning. Remember that even to-day there is no man so wise that he understands the law which regulates the relation of any fertilizer to any crop; that few have observed the mystery of that wonderful influence of the first impregnation of the dam upon the future offspring of whatever sire; that the origin and contagion of the cattle disease, or pleuro-pneumonia, remain hitherto without adequate scientific exploration; that the practical farmers and men of science, all combined, understand as little the destructive potato rot, which concerns the economy of every farm and every household, as the aborigines who first descried the Mayflower understood of the poems of Homer or the philosophy of Aristotle. Not undervaluing the past achievements of science, remember how infinite the extent and variety of the conquests which yet remain to her."

How little, indeed, does agriculture yet know! How little of the life-giving pollen! Yet there is nothing in nature that forbids man to attain such knowledge of its action that, by means of it, he can originate such varieties as his imagination may conceive within the limits of the character of the genus.

> "Happy the man who doth the causes know
> Of all that is."

But it is not in their occupation only that the progress of the industrial classes is to be viewed. They have relations to society and to the State. And, alluding to these, the Governor thus speaks to the industrial classes of New England:

"Obedient to order and practicing industry, as well as loving individual freedom, the people of New England have acquired at last an instinct which discriminates between license and liberty, between the passions of the hour and the solemn adjudications of law. They possess the traditions of liberty, they inherit ideas of government, they bear about in their blood and in their bones the unconscious tendencies of race, which rise almost to the dignity of recollections, and which are more emphatic and more permanent than opinions. By the toil of more than seven generations they have acquired and hold in free tenure their titles and their possessions. The dignity of the freehold, the sacredness of the family, the solemnity of religious obligation, the importance of developing the intellect by education, the rightful authority of government, the rightfulness of property earned or inherited, as flowing from inalienable self-ownership of man and the rights of human nature, the freedom of worship, the idea of human duty, expanded and enforced by the consciousness of an immortal destiny, are alike deeply imbedded in the traditions and convictions of the immense and controlling majority of our people."

"If there is aught which men deem radicalism, or fear as dangerous speculation in our theology or our politics, I call mankind to bear witness that there is no child so humble that he may not be taught in all the learning of the schools, no citizen so poor that he may not aspire to any of the rewards of merit or honorable exertion, not one so weak as to fall below the equal protection of equal laws, nor one so lofty as to challenge their restraints; no church or bishop able to impose creed or ritual on the unconvinced conscience; no peaceful, pious worship, which is unprotected by the state. Thus liberty stands, and the law supports liberty; *popular education lends intelligence to law, and gives order to liberty*, while religion, unfettered by human arbitration between the

soul of man and the throne of the Infinite, is left free to impress the individual conscience with all the sanction of its supreme behests, and of its celestial teachings."

Not less truthful are these quotations than their eloquence. In them are pictured that political condition which exists nowhere else than among an intelligent industrial class. Look on this picture and then on the following—the one redolent with intelligence, the other shrouded in the gloom of ignorance; the one self-governing, the other but the blind tool of despotic ambition.

The intelligent correspondent of the New York Evening Post, describing the incidents of General Sherman's march through Georgia, thus speaks of the people there:

"Frequent occasions occur for conversation with the people. In the upper part of the State, not meeting with any but the poorer, more ignorant class, I wished to believe that the rich and refined class had fled further south; but, although I have made diligent search for the intelligent, intellectual aristocracy, I have met only with failure and disappointment. Rich men there are, whose plantations line the roads for miles; men and women who own, or did own, hundreds of slaves, and raised every year their thousand bales of cotton, but their ignorance is only equalled by that twin sister of ignorance, intolerance. I can understand, as I never did before, why it was that a few persons, who every year represented the south in Congress, were able to wield that influence as a unit. To be sure the interest of slavery was all-controlling, yet it never would have brought this people to the pitch of civil war, had they received the most common benefits of education. The solemn truth is, that the southern people have never had any conception of the nation as I did. They do not know what it is to be an American."

These pictures teach us a lesson—made solemn by our national calamities. And nowhere is this lesson better enforced than in the following language of Governor Andrew:

"Schools, colleges, books, the free press, the culture of the individual everywhere, the policy of attracting, encouraging, and developing all the great qualities of the head and heart—in a word, the production and diffusion of *ideas*—in these shall rest forever the secret of your strength to maintain your true position. I implore you to unite and not divide in your policy. *Whenever you can create a great school, or find a great professor, unite to strengthen the school, and to make sure of the man.* Our system of diffusing knowledge through the local schools, our plan of distributing elementary instruction, are things of which we are sure. But your district schools will themselves go to seed, your knowledge will become bigoted and mean, unless you remember that the encouragement of these higher institutions from which they are fed, and where their teachers are themselves taught, is as needful as the creation of the head of water above the dam is to the spindle's point. Your greatness must be found hereafter where it has been found hitherto, in the highest development and cultivation of the faculties of *men*."

THE PROFITS OF WOOL-GROWING, AND THE FUTURE WOOL MARKET.

We give below a most valuable communication on the profits of wool-growing, and valuable, too, as exhibiting what energy and business attainments can accomplish in agriculture, even when their possessor is wholly unversed in

farming. It furnishes an instance among hundreds of others that might be cited of the truth of the opinion advanced in our report of a year ago, that industrial education should aim more to develop the faculties of the mind than narrow it down to knowledge in a mere pursuit, fitting all for whatever occupation our changing American life and energies may invite the individual into. "Here," as was remarked in that report, "the merchant longs to be released from the distracting cares of commercial pursuits, and the opulent manufacturer from the dangers of changing markets. Both anxiously desire the rest and enjoyment found in the country life." It shows the truth of the remark of Governor Andrew, of Massachusetts, in his address at Springfield, that "the tendency of young men to seek other than rural employments is partially balanced already by the tendency of their fathers to return to them."

Making all allowances for the favorable time in which the writer has made his experiment, and the additional interest on the purchase-money of so much of the farm as used in his sheep husbandry, which, we think, is not fully represented in the cost of keeping his flock, we still see how inviting to wool-growing is the experience of our correspondent, as shaped by energy and business intelligence.

The future of the wool market is most encouraging. That the prices will be affected by the return of peace is very certain, but they will not be, we think, to the extent of the change in the prices of other commodities. The south has continued the war until it has become so much exhausted in labor, money, means of transportation, and to the ruin of so many plantations, that a crop of cotton, strongly competing with the wool product, cannot soon be grown afte the return to peace.

Again, the price of wool has never had an advance equal to most other products and to the advance in gold. The United States Economist remarks that "there is no article in the catalogue of merchantable commodities that has advanced so little since the commencement of the war as wool," and this it shows by the following table, the first column of which exhibits the market rates of gold and the second and third columns the currency and gold prices:

Month.	Gold rates.	Currency price of wool.	Coin price.
January	155	$0 80	$0 51.61
February	157	71	45.22
March	162	74	46.12
April	170	76	44.70
May	180	80	44.14
June	205	89	43.11
July	256	97	37.89
August	256	1 03	40.28
September	230	1 07	46.52
October	205	86	41.95
November	230	94	40.87
December	333	98	42.60
Average	203½	87.91	43.59

By this table it will be seen that in January gold was 155; in December 233; a difference of 78 cents, being an increase of 50 per cent. Wool in January was 80 cents in currency, and in December 98 cents, a difference of 18 cents, being an increase of only 22½ per cent. In the coin price there is an actual decrease of 9 cents during the year. In January the difference between the currency and coin price was 55 per cent.; in December that difference had increased to 140 per cent., occasioned not only by the *increased* currency price, but by the *decreased* coin price. The chief cause of this injustice to the American wool-grower is found in the heavy importations of wool in 1864. Whilst the home product was from 80,000,000 to 95,000,000 pounds, the imported wool was 74,963,047 pounds. But this competition will not exist hereafter, for the tariff duty on wools, under the act of last session of Congress, is rapidly decreasing the amount of these imported wools. This is seen in our imports of wool from Great Britain. In eleven months of 1863 we imported 14,202,122 pounds; in eleven months of 1864, but 4,822,147 pounds.

Again, under the misnamed reciprocity treaty with Canada, which ought to have been entitled, A treaty to sacrifice the interests of agriculture for the benefit of commerce and manufactures, wool was admitted free of duty; and so large a quantity of the kind most in demand, *the combing wool*, came from that quarter, that among eastern manufacturers it is known by the name of Canada wool. Notice has been given that this treaty will be abrogated; and although it cannot be for a twelvemonth after such notice, yet the fact of its certain abrogation at that time will serve to uphold the price during 1865.

In view of the fact that these Canadian combing wools will be excluded, as well as from the general fact, shown in our last report, that in Europe as well as in the United States, the coarser wools are now consumed in larger proportion than the finer, as also that there is a rapid increase in the consumption of mutton, we urge our wool-growers to a greater increase of the Cotswolds and Leicesters, and such crosses of these as yield profitable fleeces and carcasses.

Concurring in the wish of the Economist, that it hopes to see the day when every pound of wool consumed by our manufacturers *will be grown in America*, we commend the following letter to our readers:

—

SPRING BROOK FARM,
Near Kalmazoo, Michigan, January 16, 1865.

DEAR SIR: Yours of the 6th instant is before me, and having the leisure, I hasten a reply, and in doing so, permit me to do so somewhat in detail. The spring of 1861 found me tired of commercial life, sickened with politics, advanced in years, and quite infirm from sedentary habits; with no practical experience in farming, the use of agricultural implements or the habits of stock. I traversed portions of Ohio, Illinois, Wisconsin, and Iowa, looking for a farm to retire upon. In October I purchased in this State, and on the first day of November, like the man who purchased an elephant, I found myself the owner of four hundred and eighty acres of land, and "didn't know what to do with it"—a fit subject for knowing ones to impose upon.

I have since learned that the flock I bought with the farm, consisting of

wethers, ewes and lambs, were common sheep. The lambs graded up by a grade Spanish buck, shearing ten pounds of washed wool. This was a flock of two hundred and seventy-six, and cost $2 50 each, or $690. Another flock of eighty, having two French bucks, a few nearly pure French ewes, a few Leicesters, and about equally divided between ewes, lambs and wethers, I purchased for $150. To this purchase I added two as good Spanish blooded bucks as could be obtained, for $30, making 358 sheep, costing me $870. These were considered high figures at that time, and the source of some merriment to the yeomanry in the vicinity. As if to add to my confusion, about the middle of December my shepherd came to me and said "the largest flock had the *scab*, and that the vender knew the other flock had the *foot rot* when he sold them to me, and that I should slaughter the flock and keep no sheep for years to come." Here was a dilemma, and the "book farmer" would trot back to town again wiser than he came, in the opinion of some. Goaded to desperation by such remarks, and the idea of being so "wooled," I "off coat" for a personal examination. Some of the largest flock had spots on their haunches and shoulders of harsh, dry, and matted wool; the skin under these spots exhibited small pustules, and the whole skin yellow in appearance. This seemed the scab indeed, and I treated it as such by withdrawing the diseased ones, and housing them in warm stables and pouring on to the spots from a tea-kettle a strong solution of tobacco as often as it became dry, and until the old wool on the spots sloughed off, a new and healthy growth starting. This occurred within three weeks. No new cases appeared, and I have since determined their disease to be "pelt rot," contracted from running through the wet autumn of 1861, in high clover. The second flock undoubtedly had a slight touch of the foot rot, contracted from the low lands they had run on the season before. The hoofs of this flock I immersed twice a week in pyroligneous acid, diluted one-half, and, suffice it to say, the first day of the next February no lame sheep or skin disease could be found in the flock. By this time, becoming somewhat interested in the welfare of my sheep, and inured to exercise, as the 15th of April approached, I took personal charge during the lambing season, rearing about 70 per cent. of those dropped; thus ended all my fears. I could tell "a sheep from a goat," and went on my way, "thanking God and taking courage."

Now for the general success and three years' experience. The whole flock was debited with their purchase-money. At the end of the year interest thereon was charged at 10 per cent., charging them the first year $1 50 per head for board and shearing. The second year, the account running two years before balancing, the flock was debited with one year's interest on the previous year's board. As I sold culls, wethers and lambs, and wool, the flocks received credit, as the following exhibit will more particularly unfold:

1861.			
November	1.	To purchase money for 358 sheep	$870 00
1862.			
November	1	To purchase money of 1 buck	20 00
		To board and shearing 350 sheep 1 year, at $1 50 each	525 00
		To 10 per cent. interest on $870 purchase-money, 1 year	87 00
1863.			
March.		To purchase money for buck-lamb	10 00
November.		To board and shearing 423 sheep, at $1 50 each	634 00
		To 10 per cent. interest on $1,425, original cost of flock, and 1 year's board	142 50
		Total cost	2,228 50

Credit.

1861.			
December.	By 8 sheep slaughtered, at $2 50 each ...	$20 00	
	By receipts for lost sheep's pelts	12 00	
1862.			
July.	By receipts for 1,526 lbs. of wool, at 50 cts.	763 00	
August.	By receipts for 2 bucks sold	20 00	
October.	By receipts for 50 wethers sold, at $2 50 .	125 00	
November.	By average interest on receipts.	23 50	
1863.			
September.	By 20 cull ewes and 50 wethers, at $3 ...	210 00	
	By 51 wether lambs and 25 cull ewes at $2 50.....	190 00	
October.	By 25 cull ewes, at $3, 50 do. at $3 50...	250 00	
	By 25 wethers, at $3	75 00	
	By 22 wether lambs, at $2 50, 1 buck at $3	58 00	
	By 7 lambs' pelts.....	4 00	
	By 1 sheep slaughtered.....	3 25	
November.	By 1,726 lbs. of wool, at 75 cents.....	1,294 50	
	By on hand 240 breeding ewes, 69 one shear ewes and 19 one shear wethers, total 328, at $2 50	820 00	
	8 bucks, valued at	115 00	
			$3,983 25
	Deduct expenses as above.....		2,288 50
	Net profit.....		1,694 75

It will be observed in the foregoing statement of two years, that the sheep on hand were estimated at $2 50 per head, exclusive of bucks. In opening the account for 1863 and 1864 I value the ewes, lambs, and wethers at $4 each. which, if added to the profits, as shown in the balance of 1861, 1862, and 1863, exhibits a net profit of $2,186 75 on an outlay of $870 the two years before. The third year's exhibit is as follows:

1863.			
November 1.	To valuation of 328 sheep at $4.....		$1,312 00
	To valuation of 8 bucks.....		115 00
	To cash paid for buck John.....		25 00
1864.			
June.	To cash paid for washing and shearing.....		50 00
November 1.	To 10 per cent. interest $1427 valuation Nov., 1863		142 70
	To boarding 337 sheep one year at $2 each.....		672 00
	Total cost.....		2,316 70

Contra credit.

1864.			
July	By 1,478 pounds of wool, at $1.....	$1,478 00	
August	By 7 wether lambs to butcher.....	21 00	
August 11.	By 19 yearling wethers, at $4.....	76 00	
September 6.	By 70 wether lambs, at $3 50.....	245 00	
	By 12 cull ewe lambs, at $4.....	48 00	
Sept. 10.	By 41 cull ewes, at $5.....	205 00	
October	By cash for buck lamb.....	15 00	
	By cash for Dan buck.....	15 00	

November 1. On hand 69 one-shear ewes, 60 ewes of the original flock, 122 ewes twice shorn, 85 ewe lambs, and 3 wethers ditto, 5 buck lambs—in all 344, at $4 each	$1,376 00	
7 bucks	115 00	
		$3,594 00
Net profit		1,277 30

I am now in my fourth year in sheep husbandry, and having disposed of all my wethers but three, and all of the ewes which had lambs and which did not shear four and a half pounds, at $5 per head, I have valued the whole flock at what the drafted ewes sold for, viz: five dollars each. This increase of one dollar each, added to the profit of last year, makes the net gain of $1,621 30 on an investment one year ago of $1,427. My present flock, it will be seen, consists of 60 ewes of the original flock, 122 two-shear ewes, and 69 one-shear do., all with lamb, or supposed to be; three lamb wethers, 85 ewe lambs, five buck lambs, and five old bucks. The latter I have estimated at $115, as the year previous, and all of the former at five dollars each, believing them, aside from the change of times, to have doubled in value by careful breeding. So that the account stands on the first day of November, 1864—

Dr.

To 5 bucks	$115 00
To 344 sheep, at $5 each	1,720 00
	$1,835 00

The first year I fed with clover hay and about one gill of shelled corn to each sheep, commencing to feed corn to the ewes two weeks before copulation with the bucks, and continuing it until turned out in the spring. It will be seen that the flock of ewes and wethers sheared a little over four and a half pounds general average that year. The next year I fed no corn after January, and the general average of the same flock was but a trifle over four pounds. The last year I fed corn to the breeding ewes as heretofore before copulation, and until the 1st of February, when I commenced with wheat bran, known as coarse middlings, and weighing about forty pounds to the bushel, intending to feed about three-quarters of a pound to each until turn-out. The flock of ewes thus grained and fed with poor clover hay twice a day, salted once a week, including 19 inferior wethers, once shorn, and since sold for four dollars each, it will be seen by inspection gave a general average of over four and a half pounds of clean washed wool, which sold readily in the barn for one dollar per pound.

Last season I reared over 90 per cent. of lambs, and expect to do so this spring. Dropping should commence by the 5th of April, and should be all through with before the ewes are turned out. Lambs do not do well coming after so great a change in diet; and if an ewe loses her lamb, her udder is generally ruined for want of care. One shear-sheep requires better feed than older ones: quite as good as lambs if allowed to breed. I am feeding that kind of ewes hay twice a day, and one pound of wheat middlings each. The older ewes have straw, bean haulm, or corn-stalks twice, and hay once, with three-quarters of a pound of the middlings per day. The lambs have hay three times a day, with a peck of shell-corn mixed with treble the quantity of middlings. I have not lost a sheep since last April, at the lambing season, nor do I expect to until that season shall arrive again. All the ewes wear in their right ear a

copper rivet, numbered on one side, with my initials on the reverse. These are inserted after the ear has healed from the puncture made with a No. 10 harness punch. When a sheep is being shorn, its number is taken, the fleece when off is weighed, and this last year, if a two-year old ewe did not raise a lamb and shear four and a half pounds of washed wool, she was put into the draft flock for sale. At the next shearing I shall raise the standard to five pounds. My sheep are rapidly becoming what are now known as Spanish sheep. The principal buck weighed seventy pounds before shearing, and his fleece weighed twelve pounds of clean free washed wool. Enclosed find a sample of seven months' growth. I have no confidence in those high-priced, fancy-faced, oily bucks, peddled through the country. They are like Peter Pindar's razors made to sell. My bucks are kept in an enclosure of one acre, with an open shed on three sides, *shingled* with straw. This yard has a hay barn in the centre, several straw stacks, and is partitioned off so that no more than fifty sheep feed together. The yard is upon a twenty feet elevation, above an enduring stream, to which the sheep always go for drink after each meal. The stream is strongly impregnated with iron, to which I attribute the general good health of the flock and healthy strong lambs. The ammonia in snow and magnesia in water is, in my opinion, a fruitful source of goitre or swelled glands in lambs.

With clover hay in the barn at six dollars per ton, corn at fifty cents, bran at ten dollars per ton, straw and corn fodder accumulating on a farm to feed therewith, sheep can be kept one year and shorn for $1 50 per head, and give their entire droppings to manure with as profit.

The season last past the forage was higher, and it will be seen the flock is charged with $50 for washing and shearing, and $2 each for board. A sheep should receive daily about 3 per cent. of its live weight in good clover hay in winter, or its equivolent. The tables found in your report of 1862, page 273, are unquestionable, and of great value to the practical shepherd. By 3 per cent. of live weight daily, as a standard, it is not difficult to arrive at a just estimate of the cost of wintering, when the price of forage is established.

Hoping to hear from you often.

I am, yours,

C. S. POTTER.

Hon. I. Newton,
Washington, D. C.

THE DEPARTMENT PLAN OF ESTIMATING THE AMOUNT OF CROPS TESTED.

We have, at different times, made known the plan of estimating the annual products of the country by the Department of Agriculture. It necessarily must be tested, and these trials will be noticed in these reports; for we have now so much confidence in the plan itself, that whatever errors may be found in the results, we believe will be in mistake in details, which may be corrected, and not a radical wrong in the plan itself.

We have before us two tests, as severe as the plan could be subjected to, because they refer to the tobacco and hog crops—one vegetable, the other animal, and two of our most changing crops since 1861; the one (tobacco) so vastly increasing in the loyal States, and the other so greatly decreasing.

In Rader & Son's annual tobacco circular for New York there is this statement:

"The enormous yield of tobacco in 1863, of which we received in this market over 132,000 hogsheads, and therefore must have been fully 175,000 hogsheads, taking in the consumption in the west and stocks still held there, has been a matter of surprise even to the best informed."

We believe the crop of 1863 is larger than here stated. To the 132,000 hogsheads received at New York, there were inspected in 1864, at Baltimore, 52,873 hogsheads. This alone makes the crop received at New York and Baltimore 184,873 hogsheads. The consumption of that which has been inspected elsewhere, and of that which was consumed without inspection, could not be less than 35,000 hogsheads. If so, then the crop of 1863 may be represented as 219,873 hogsheads, equal to 263,847,600 pounds, estimating the hogshead at 1200 pounds.

As reported by this department, the tobacco crop of 1863 was 267,267,920 pounds.

The second test of the plan of the department is in its estimated decrease of the number of hogs. In 1863–'64 the number packed and shipped in the west was 3,291,105. The estimated amount, as stated in the bi-monthly report of September and October, for the season of 1864–'65, was 2,340,469, being a decrease of 950,636. The returns, as far as received, show a decrease of 488,047 on 1,750,344 of last year's packing, being equal to a deficit of 917,656 on the whole number packed last season. So close an approximation would be regarded with favor in ordinary circumstances; but under the remarkable changes which the hog crop has endured from the loss of the corn crop in 1863, it presents an estimate that will command great confidence in the plan adopted here for the estimates of crops.

Henry Milward & Co.'s provision circular of Chicago, of January 11, has the following comments on the pork market:

"The returns from the various packing points come in but slowly; but they all show more than even the estimated deficiency: and we see no reason to change our original opinion, that the total deficiency will be at least 800,000 head, and may reach, and possibly exceed, 1,000,000, &c., &c., &c."

CINCHONA PLANTS.

On the 13th of January plants of *Cinchona condaminea* (Peruvian bark tree) appeared at the agricultural garden in basins in which seed had been sown. They came up by hundreds in less than one month from the time of sowing. The seed, however, were in excellent condition when received from their native country, having been gathered when thoroughly ripe in September last, and subjected afterwards to careful treatment. In trials with Cinchona at the Kew gardens in London, some years since, germination took place at the end of three months.

The present species of Peruvian bark tree is from the vicinity of Loxa, in Southern Ecuador, and is one of established reputation. It is believed to be well adapted to cultivation in a great part of California, in the mountain regions east of that State where cold is not extreme, in the mountains of the interior of Texas, and in other locations in our country.

THE AVERAGE YIELD PER ACRE AND AVERAGE PRICES OF THE CROPS OF 1864.

The following tables show the *average yield* per acre and the *average prices* of the leading crops of 1864 for each of the States named. It will be republished in the February report, and tables made from it, exhibiting a comparison with the value of the crops of 1863, the yield per acre, and the average of each crop in the several States and for the United States.

Table showing the average yield per acre and the average prices of the principal crops of the loyal Atlantic States for 1864.

STATES.	WHEAT.		RYE.		BARLEY.		OATS.		CORN.	
	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.
Maine	10 5/11	$2 60	12	$2 04½	18	$1 45	22	$1 01	27	$2 10
New Hampshire	12½	2 68	14½	2 04	18	1 69	24	92	29½	2 11
Vermont	14	2 57½	15⅕	1 88	22	1 61	33	87	38⅘	1 96
Massachusetts	16	2 41	15	2 00	20	1 78	26 3/10	1 04	31½	2 04
Rhode Island	15	2 50	17	2 00	25	1 64	33	98¾	30¼	2 09
Connecticut	16½	2 37½	15	1 91	23½	1 81	30	1 00	31	1 81
New York	13	2 34⅜	14½	1 70½	18¾	1 74⅓	23	94	29⅛	1 68
New Jersey	15	2 33	13½	1 69½	20	1 78½	32½	91⅐	31⅜	1 70⅐
Pennsylvania	12	2 40	14¼	1 70⅙	18	1 71	29¼	87	29½	1 54¾
Maryland	11½	2 60	14	1 64	26⅜	1 78⅜	22	87	21½	1 62
Delaware	12	2 53	15⅜	1 56⅜	27	1 87½	24	80	20⅛	1 55
Kentucky	10¼	1 96½	13⅗	1 35½	23⅕	1 59⅙	24¼	79¼	28½	96⅜
Ohio	10¼	1 93	12¼	1 32⅙	23⅜	1 56	29	72⅕	31⅕	96
Michigan	12	1 96	12¼	1 36⅓	19⅕	1 56	26	75¾	24⅓	1 26
Indiana	14	1 75	14	1 31	24	1 56	26	73⅗	29	95½
Illinois	14⅕	1 55	15	1 01½	22⅜	1 37	31⅙	61	33	75
Missouri	14⅕	1 75	15⅜	1 11⅗	23	1 47⅜	25¼	71½	26⅘	97
Wisconsin	9½	1 48⅕	12¼	1 09⅙	13¼	1 49	27½	60	31	94
Iowa	12¼	1 34½	15	92	21	1 20¼	32	53	36⅜	67⅝
Minnesota	13⅕	1 13⅜	14⅕	92	20	1 09⅙	28¾	73½	33	94
Kansas	15	2 01	17	1 25	23	1 27	29	96½	25	1 37
West Virginia	9¼	2 01	12½	1 47	20½	1 67	24	79½	31	1 06
Nebraska Territory	14	1 50	16	1 20	20	1 22½	28	68⅓	28½	99

Table showing the average yield per acre and the average prices of the principal crops of the loyal Atlantic States for 1864.

STATES.	BUCKWHEAT.		POTATOES.		LEAF TOBACCO.		HAY.		FLAX-SEED AND LINT.	
	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.	Average *yield* per acre in 1864, stated in pounds.	Average *price* per pound on 1st of January, 1865.	Average *yield* per acre in 1864, stated in tons.	Average *price* per ton on 1st of January, 1865.	Average *yield* per acre in 1864, the seed stated in bushels and lint in lbs.	Average *price* per bushel of seed and per lb. of lint when sold.
Maine	19	$1 28	143	$0 67	.....	.....	⅞	$21 00	.....	.....
N. Hampshire	19⅙	1 32	164	60	985	$0 25	1	21 00	8 bush.. / 800 lbs..	$3 00 / .....
Vermont	19⅗	1 04	162½	54	.....	.....	1	17 95	7 bush..	3 50
Massachusetts	16¼	1 25	132¼	93	1,650	25	1	29 00	.....	.....
Rhode Island	.....	.....	127½	97½	1,350	30	1	31 50	.....	.....
Connecticut	16⅗	1 35	131	83	1,450	25	1⅕	27 00	.....	.....
New York	18⅑	1 13⅜	115⅓	66	856	24⅗	1 2/19	23 05	7 9/10 bush / 260 lbs..	3 00 / 21¾
New Jersey	17	1 44	86⅔	1 08	.....	25	1 4/7	26 71½	12 bush.	3 23
Pennsylvania	18¾	1 16¾	110⅓	89	1,066½	18½	1 3/10	24 55	8½ bush. / 268 lbs..	3 08 / 26¾
Maryland	19⅗	1 58	55	1 20	750	13⅜	1⅛	27 00	10 bush. / 250 lbs..	3 16 / 20
Delaware	20	1 00	125	1 32	.....	.....	1½	30 00	10 bush. / 237½ lbs.	3 50 / 25
Kentucky	20⅛	1 37½	81⅙	1 09⅜	770	12	1⅛	20 16	9½ bush. / 200 lbs..	1 80 / 62½
Ohio	17	1 10	93	91½	870½	13½	1⅛	19 38	8¾ bush. / 221 lbs..	2 43 / 29¾
Michigan	12	1 18½	79	81½	1,000	20	1 1/19	19 33	8 bush.. / 200 lbs..	2 67 / 30
Indiana	18½	1 24⅛	80	99½	856⅓	14	1½	17 81	8 1/10 bush / 225 lbs..	2 22½ / 50
Illinois	17	1 10	81¼	1 15	907	16½	1½	15 33	8⅛ bush.	2 45
Missouri	15⅘	1 07	39	1 75⅛	562½	13⅘	1⅞	18 12½	9⅛ bush. / 200 lbs..	2 05 / 22½
Wisconsin	16½	88¾	118	55	980	15	1⅐	13 00	8 bush.. / 213 lbs..	2 25 / 37
Iowa	17½	1 14	76	1 11⅕	957	25	1⅘	9 51	10 bush. / 212 lbs..	2 21 / 22⅜
Minnesota	17⅜	1 23⅓	112	67⅐	800	20	1½	9 36	8 bush.. / 200 lbs..	4 00 / 30
Kansas	15	1 25	43	2 68	675	11¼	1⅜	13 00	10 bush.	2 50
West Virginia	18⅕	1 32	74	1 29	655½	20	1½	20 61	6½ bush. / 200 lbs..	2 29 / 20
Nebraska Ter'y	.....	.....	51⅜	2 08	.....	.....	1⅛	7 33	.....	.....

Table showing the average yield per acre and the average prices of the principal crops of the loyal Atlantic States for 1864.

STATES.	SORGHUM MOLASSES.		BEANS.		PEAS.		HOPS.		CLOVER-SEED.	
	Average *yield* per acre in 1864, stated in gallons.	Average *price* per gallon on 1st of January, 1865.	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.	Average *yield* per acre in 1864, stated in pounds.	Average *price* per pound on 1st of January, 1865.	Average *yield* per acre in 1864, stated in bushels.	Average *price* per bushel on 1st of January, 1865.
Maine	.....	.....	14	$2 83	14⅜	$2 07	900	$0 33	4½	$14 00
New Hampshire	.....	.....	14¾	2 80	13¾	2 25	458	38	4	14 12½
Vermont	.....	.....	17⅜	2 57	18	1 82	550	25	4	15 00
Massachusetts	.....	.....	11⅐	2 84	20	2 25	.....	50	.....	18 00
Rhode Island	.....	.....	15½	2 87½	10	3 00	.....	.....	.....	.....
Connecticut	126⅜	$1 20	15⅜	3 00	20	2 90	.....	.....	3	9 50
New York	112½	1 06	16	2 38	16¼	1 79½	661½	41	2⅞	14 27
New Jersey	105	1 18	18	2 42	.....	.....	600	42	.....	15 60
Pennsylvania	114⅞	1 22	18⅐	2 60½	21⅜	1 98⅓	431⅓	42½	1⅜	13 54
Maryland	91	1 14	21	2 65	15	2 50	.....	.....	⅘	14 20
Delaware	134⅓	1 00	15	2 33	20	1 75	.....	45	4	13 66
Kentucky	102	1 20½	25	2 00	.....	3 00	.....	50	3	13 25
Ohio	118	1 03⅓	15⅓	2 27	20	2 58⅓	700	28½	2½	13 00
Michigan	121½	1 19¾	14	2 00	18	1 94	1,208	38⅓	1⅘	12 44
Indiana	96⅓	1 05½	17⅜	2 40	.....	.....	.....	22½	3⅕	12 67
Illinois	100½	1 01¼	17	2 02	22⅜	1 71	1,350	40	3¼	10 66
Missouri	106	1 03½	20⅜	2 05	17½	1 31	.....	.....	4	9 87½
Wisconsin	111¼	1 19	16½	1 89½	21	1 45½	1,350	35⅞	2⅒	11 32
Iowa	102	1 12½	18¼	2 10	25	1 85⅓	1,250	45	2⅖	11 31
Minnesota	103½	1 29	13	2 97	18	1 83½	.....	.....	.....	.....
Kansas	75½	1 14⅓	24	3 17	21⅜	2 00	.....	.....	.....	.....
West Virginia	114	1 17	21⅓	2 28½	21⅜	2 50	.....	.....	3½	11 40
Nebraska Territory	120	1 28	12¼	1 75	.....	.....	.....	.....	.....	.....

IMPORTS AND EXPORTS.

IMPORTS.

The total imports at the port of New York are as follows:

Years.	Dry goods.	General merchandise.	Total.
1862	$56, 121, 227	$115, 954, 822	$172, 076, 049
1863	67, 274, 547	117, 124, 716	184, 399, 263
1864	71, 589, 752	133, 473, 764	205, 063, 516

KIND OF DRY GOODS IMPORTED.

	1862.	1863.	1864.
Manufactures of wool	$25, 718, 592	$29, 713, 956	$31, 411, 965
Manufactures of cotton	8, 501, 512	7, 913, 957	8, 405, 246
Manufactures of silk	11, 568, 807	15, 534, 469	16, 194, 080
Manufactures of flax	7, 766, 946	10, 381, 059	11, 621, 831
Miscellaneous	2, 665, 370	3, 731, 106	3, 956, 630
Total	56, 121, 227	67, 274, 547	71, 589, 752

IMPORTS OF GENERAL MERCHANDISE AT NEW YORK FOR 1864.

All imports, except dry goods and specie, are embraced in this heading, and below we give some of the leading articles of this class of importations, that our readers may see the chief of our wants of foreign merchandise, besides dry goods.

	1862.	1863.	1864.
Cigars	$1, 012, 162	$608, 403	$788, 237
Cotton	.....	.....	11, 157, 449
Coffee	8, 517, 284	7, 796, 635	14, 543, 955
Tea	8, 676, 245	6, 796, 102	8, 172, 072
Sugar	14, 727, 598	14, 534, 579	15, 938, 756
Molasses	1, 562, 904	1, 928, 598	3, 496, 790
Wool	6. 860, 609	9, 035, 557	10, 015, 217
Furs	1, 435, 518	1, 912, 166	2, 053, 786
India-rubber	992, 348	1, 407, 536	1, 196, 781
Hides	5, 134, 345	5, 966, 395	5, 829, 337
Iron, bars	1, 301, 010	2, 457, 575	3, 427, 850
Iron, pig	203, 375	397, 916	803, 788
Iron, railroad bars	500, 419	1, 484, 973	3, 687, 970
Steel	1, 602, 391	2, 063, 842	2, 012, 197
Wines	860, 710	1, 198, 283	2, 272, 330
Tin and tin plates	4, 174, 651	3, 975, 605	3, 461, 424

The *value* of the foregoing imports is *gold value*, as fixed at the ports from whence imported.

[From the Journal of Commerce, New York.]

Imports of foreign wool at New York during the years 1863 *and* 1864.

	1863.			1864.		
	No.	Weight.	Entered.	No.	Weight.	Entered.
	Bales.	*Pounds.*	*Value.*	*Bales.*	*Pounds.*	*Value.*
England	27,112	11,426,648	$2,013,770	15,463	6,551,586	$1,312,317
Buenos Ayres	14,819	12,203,407	1,819,690	14,121	11,582,990	1,780,496
France	24,964	7,075,227	1,223,543	21,477	5,837,840	1,080,041
Belgium	2,135	1,403,108	255,279	1,745	1,005,840	264,840
Africa	10,613	4,964,345	822,002	24,651	10,973,155	2,007,742
Brazil	2,009	1,135,073	168,777	2,115	1,306,529	219,311
Sardinia	82	24,020	2,963	.....	.....	.....
Venezuela	7	550	58	.....	.....	.....
Tuscany	571	243,318	30,874	257	150,331	15,680
British N. A. colonies	20	3,206	955	.....	.....	.....
Bremen	501	183,032	60,658	283	96,396	24,799
New Grenada	295	56,449	9,086	4,921	6,362,122	547,562
Scotland	31	7,300	2,679	.....	.....	.....
Wrecked	98	19,317	2,935	.....	.....	.....
Spain	598	191,625	30,463	499	137,324	22,710
Canary Islands	174	1,724	1,734	.....	.....	.....
Italy	.....	.....	.....	79	26,299	5,124
Hamburg	430	169,055	49,331	1,051	281,041	38,847
Gibraltar	221	48,639	7,945	421	83,699	14,316
Cuba	16	5,869	894	.....	.....	.....
Portugal	893	180,354	30,227	878	175,889	29,281
British West Indies	24	907	139	340	316,059	42,529
Porto Rico	.....	.....	.....	410	128,438	17,616
Turkey	2,567	1,117,552	185,004	1,869	537,884	113,803
Dutch West Indies	92	34,739	4,241	48	15,932	1,953
Mexico	3,786	1,314,209	176,024	1,108	460,599	60,562
Cisplatine Republic	1,270	1,058,392	172,221	3,923	3,409,672	613,844
Russia	3,705	1,387,479	217,743	9,445	3,505,189	600,343
British East Indies	2,188	703,084	146,598	3,586	1,247,396	233,730
British poss. in Africa	6,456	2,915,994	526,012	1,174	518,954	93,892
Chili	3,160	757,445	143,643	3,527	1,539,795	194,849
Cadiz	151	30,649	5,354	.....	.....	.....
Malta	6	2,772	666	.....	.....	.....
China	147	79,213	9,514	36	4,800	439
Austria	.....	.....	.....	66	27,045	7,527
Morocco	.....	.....	.....	1,096	356,133	47,296
Danish West Indies	.....	.....	.....	135	4,436	512
Greece	.....	.....	.....	575	230,755	26,330
Total	109,141	48,744,901	8,121,032	115,799	56,874,128	9,418,291

These values are in gold, and represent the foreign cost.

EXPORTS OF LEADING ARTICLES OF DOMESTIC PRODUCE FROM NEW YORK IN 1862, 1863, AND 1864.

Articles.		1862.	1863.	1864.
Wheat flour	barrels	2,961,518	2,527,338	1,918,593
Rye flour	barrels	8,397	5,461	2,840
Corn-meal	barrels	132,606	140,561	105,142
Wheat	bushels	25,564,755	15,424,889	12,193,433
Rye	bushels	1,104,549	416,369	588

Oats.....bushels..	210, 669	126, 556	42, 135
Barley.....bushels..	42, 061	52, 439	150
Peas.....bushels..	113, 819	110, 911	186, 154
Corn.....bushels..	12, 020, 848	7, 533, 431	846, 831
Pork.....barrels..	171, 302	192, 903	130, 672
Beef.....barrels..	32, 977	41, 632	36, 548
Beef.....tierces..	27, 765	62, 868	49, 299
Cut meats.....pounds..	145, 102, 758	183, 519, 060	93, 800, 258
Butter.....pounds..	30, 603, 235	23, 060, 799	14, 174, 861
Cheese.....pounds..	39, 200, 439	40, 781, 168	49, 755, 842
Lard.....pounds..	126, 651, 091	120, 881, 862	53, 436, 128
Tallow.....pounds..	43, 866, 920	43, 487, 731	31, 987, 976
Cotton.....bales..	24, 400	13, 945	26, 765
Hay.....bales..	46, 674	19, 986	40, 325
Hops.....bales..	33, 409	25, 409	22, 077
Petroleum.....gallons..	.....	.....	21, 359, 629

EXPORTS OF SPECIE FROM NEW YORK AND SAN FRANCISCO.

	1861.	1862.	1863.	1864.
From New York.....	$4, 126, 250	$59, 437, 021	$49, 754, 066	$50, 113, 809
From San Francisco..	.....	.....	46, 071, 920	55, 707, 201

Of the above exports from San Francisco there was exported to New York the following: 1861, $34,370,587; 1862, $25,010,116; 1863, $12,207,320; 1864, $12,903,089.

EXPORT OF PETROLEUM IN 1863 AND 1864 FROM NEW YORK, AND THE COUNTRIES AND PLACES TO WHICH SENT.

In 1862 the petroleum oil trade was in a depressed condition because of the supply outrunning the home demand. But relief was found in the foreign demand for this new product. To show the extent of this demand, both as to amount and the places and countries from which it comes, the following table is here republished from the New York Shipping and Commercial List:

	1864.	1863.
To Liverpool.....	734, 755	2, 156, 851
London.....	1, 430, 710	2, 576, 331
Glasgow, &c.....	368, 402	414, 943
Bristol.....	29, 124	71, 912
Falmouth, England.....	316, 402	623, 176
Grangemouth, England.....	.....	425, 334
Cork, &c.....	3, 310, 362	1, 532, 257
Bowling, England.....	87, 164	.....
Havre.....	2, 324, 017	1, 774, 890
Marseilles.....	1, 982, 075	1, 167, 893
Cette.....	4, 800	.....
Dunkirk.....	232, 803	.....
Dieppe.....	79, 581	46, 000
Rouen.....	.....	143, 646
Antwerp.....	4, 149, 821	2, 692, 974
Bremen.....	971, 905	903, 004
Amsterdam.....	77, 041	436

Hamburg	1,186,080	1,466,155
Rotterdam	532,926	757,249
Gottenburg	33,813	.....
Cronstadt	400,376	88,060
Cadiz and Malaga	55,674	33,284
Tarragona and Alicante	16,823	33,000
Barcelona	25,500	.....
Gibraltar	69,181	308,450
Oporto	17,474	2,339
Palermo	7,983	57,115
Genoa and Leghorn	635,121	399,674
Trieste	165,175	3,000
Alexandria, Egypt	4,000	.....
Lisbon	167,195	64,662
Canary Islands	3,358	5,125
Madeira	.....	400
Bilboa	2,500	.....
China and East Indies	34,338	36,942
Africa	25,195	12,230
Australia	377,884	304,166
Otago, N. Z	10,810	5,500
Sidney, N. S. W	97,880	48,013
Brazil	149,676	160,152
Mexico	112,986	69,481
Cuba	418,034	356,436
Argentine Republic	20,260	24,470
Cisplatine Republic	78,552	117,626
Chili	92,550	66,550
Peru	169,061	256,407
British Honduras	6,072	440
British Guiana	7,881	15,104
British West Indies	70,976	60,931
British North American colonies	28,902	16,995
Danish West Indies	8,463	31,503
Dutch West Indies	26,638	12,143
French West Indies	16,020	9,104
Hayti	7,088	12,064
Central America	993	456
Venezuela	28,583	15,455
New Granada	57,490	107,837
Porto Rico	20,026	59,439
Total gallons	21,280,489	19,547,604

During the following years there has been exported from other ports as follows:

	1864.	1863.	1862.
From Boston, gallons	1,696,307	2,049,431	1,071,100
From Philadelphia, gallons	7,760,148	5,595,738	2,800,978
From Baltimore, gallons	929,971	915,866	174,830
From Portland, gallons	70,762	342,082	120,250
	10,457,188	8,703,117	4,167,158

The total exports from the United States are—

	Gallons.	Value from average prices.
1862	10,887,701	.....
1863	28,250,721	$14,616,923
1864	31,745,687	23,686,457

AVERAGE PRICES OF PETROLEUM IN 1864 AT NEW YORK AND PHILADELPHIA.

	Crude, (per gallon.)	Refined, (per gallon.)
January	$31\frac{3}{16}$ cents.	$52\frac{2}{3}$ cents.
February	$30\frac{1}{4}$ "	$55\frac{3}{4}$ "
March	$31\frac{1}{4}$ "	$59\frac{1}{2}$ "
April	$37\frac{3}{16}$ "	$64\frac{7}{16}$ "
May	38 "	$65\frac{1}{2}$ "
June	$44\frac{1}{5}$ "	77 "
July	$52\frac{1}{10}$ "	92 "
August	$52\frac{5}{8}$ "	$87\frac{3}{4}$ "
September	$46\frac{7}{16}$ "	$85\frac{3}{8}$ "
October	$40\frac{2}{3}$ "	$75\frac{3}{4}$ "
November	$45\frac{7}{18}$ "	$86\frac{3}{10}$ "
December	$52\frac{3}{8}$ "	$92\frac{9}{16}$ "
Average for 1864	41.81	74.61
Average for 1863	28.13	51.74

Exports of flour from Baltimore for the last four years.

Destination.	1864.	1863.	1862.	1861.
Great Britain ..... barrels	20,509	38,809	57,335	74,632
Hanse Towns	1,242	330	2,485	2,722
Holland	3,259	3,817	2,994	1,774
France	.....	.....	.....	.....
Brazil	170,594	157,286	163,807	157,786
River La Plata	12,286	933	15,872	25,313
British North American colonies	14,430	33,412	28,817	21,598
Venezuela	1,369	.....	1,962	300
West Indies	98,969	83,473	81,487	87,473
Other ports	11,424	7,331	5,514	4,060
Total	333,042	326,450	360,273	375,658

Foreign exports of provisions from Baltimore for four years.

	1864.	1863.	1862.	1861.
Beef, tierces	1,316	300	1,750	694
Beef, barrels	1,769	1,267	3,174	647
Pork, tierces	.....	.....	39	.....
Pork, barrels	5,803	6,173	11,716	7,302
Bacon, boxes	.....	10,038	7,692	.....
Bacon, pounds	577,085	742,900	1,240,000	1,805,387
Lard, kegs	41,800	59,465	111,330	51,133

Exports of tobacco from Baltimore. (hhds.)

Years.	Bremen.	Rotterdam.	Amsterdam.	France.	All other places.	Total.
1864	15,686	12,287	4,940	7,459	4,660	45,052
1863	11,672	8,135	3,371	6,383	14,576	44,137
1862	15,172	12,557	6,318	4,471	16,929	55,477
1861	32,982	23,172	8,244	5,215	16,924	86,537
1860	24,700	22,700	5,244	6,825	8,869	68,334
1859	19,180	21,735	1,253	8,311	5,495	55,974
1858	16,542	18,059	3,825	16,935	11,173	66,532
1857	18,034	11,711	4,054	7,438	6,325	47,568
1856	20,612	14,215	7,779	4,891	8,301	55,792
1855	9,103	7,510	10	7,527	1,444	36,392

EXPORTS AND PRICES OF PRODUCE.

[From the Journals of Commerce of New York and Chicago.]

Table of exports from New York of the leading agricultural products, from January 1 to January 25, 1865, compared with those of the same time in 1864, and their prices at New York and Chicago on the 25th of January.

The reader will observe that this table commences with the new year. The great falling off in the exportation of wheat flour, wheat, peas, petroleum, cut meats, and butter, will arrest attention. The increased exportation is in leaf and manufactured tobacco, and cheese.

	From Jan. 1 to 25, 1865.	From Jan. 1 to 25, 1864.	Prices on January 25, 1865.	
			At New York.	At Chicago.
Wheat flour ..... barrels..	87,816	127,178	$9 20 to 11 60	$7 00to 10 00
Rye flour ..... barrels..	.....	334	8 00 to 9 00	6 85to 7 00
Corn meal ..... barrels..	10,078	9,782	8 80 to 9 00	.....
Wheat ..... bushels..	43,834	882,949	2 05 to 2 38	1 20 to 1 47
Corn ..... bushels..	19,957	6,551	1 77 to 1 87	78 to 83
Rye ..... bushels..	141	105	1 60 to 1 65	98½ to 1 01
Barley ..... bushels..	.....	.....	.....	1 30 0 00
Oats ..... bushels..	3,529	782	1 01 to 1 04	58 to 62
Peas ..... bushels..	4,769	35,543	2 30 to 2 35	.....
Cotton ..... bales..	362	30	5 85 to 0 00	.....
Hay ..... bales..	2,208	1,188	1 70 to 1 85	85 to 1 00
Hops ..... bales..	3,500	3,168	22 to 50	33 to 55
Leaf tobacco .. hogsheads..	11,435	1,876	9 to 35	.....
Leaf tobacco .... pakages..	8,540	4,541	.....	.....
Man'fac'd tobacco . pounds..	483,371	131,476	.....	65 to 1 35
Petroleum ..... gallons..	441,886	1,117,637	63 to 64	.....
Pork ..... barrels..	9,111	11,262	35 50 to 38 00	31 00 to 34 00
Beef ..... barrels..	3,550	2,112	19 00 to 24 00	14 00 to 18 00
Beef ..... tierces..	7,069	9,442	.....	.....
Cut meats ..... pounds..	3,651,640	10,221,050	17 to 22	15 to 18
Butter ..... pounds..	1,689,657	2,818,402	32½ to 60	.....
Cheese ..... pounds..	4,358,712	1,805,365	14 to 23½	.....
Lard ..... pounds..	1,661,615	1,982,604	18½ to 22¾	20 to 21
Tallow ..... pounds..	3,327,791	3,518,677	15¼ to 16	14 to 15½

[From the New York Shipping and Commercial List.]

CONSUMPTION OF FOREIGN AND DOMESTIC CANE SUGAR IN THE UNITED STATES.

		Foreign.	Domestic.	Total.
1864	tons..	192,660	28,000	220,660
1863	tons..	231,308	53,000	284,308
1862	tons..	241,411	184,600	432,411
1861	tons..	241,420	122,399	363,819
1860	tons..	296,950	118,331	415,281
1859	tons..	239,034	192,150	431,184
1858	tons..	244,758	143,634	388,492
1857	tons..	241,765	39,000	280,765
1856	tons..	255,292	123,468	378,760
1855	tons..	192,604	185,148	377,752

CONSUMPTION OF CANE MOLASSES IN THE UNITED STATES.

		Total.	Foreign.
1864	gallons..	32,581,668	28,753,668
1863	gallons..	37,569,088	26,569,088
1862	gallons..	62,668,400	25,650,400
1861	gallons..	40,191,556	20,383,556
1860	gallons..	47,318,877	28,724,205
1859	gallons..	54,260,970	28,293,210
1858	gallons..	45,169,164	24,795,374
1857	gallons..	28,508,784	23,266,404
1856	gallons..	39,608,878	23,014,878
1855	gallons..	47,266,085	23,532,422

RECEIPTS AND CONSUMPTION OF COFFEE IN THE UNITED STATES.

		Receipts.	Consumption.
1864	pounds..	145,304,957	109,086,703
1863	pounds..	75,269,417	79,719,641
1862	pounds..	98,558,680	88,989,011
1861	pounds..	182,244,627	187,045,786
1860	pounds..	185,779,689	177,111,923
1859	pounds..	248,527,306	222,610,300
1858	pounds..	227,656,186	251,255,099
1857	pounds..	217,871,820	172,565,934
1856	pounds..	230,913,150	218,225,490
1855	pounds..	228,214,533	218,378,287

Revenues and expenditures of the United States for 1862, 1863, *and* 1864, *and the estimated for* 1865.

	1862.	1863.	1864.	1865.
Customs	$49,056,397	$69,059,642	$102,316,153	$70,271,092
Lands	152,204	167,617	588,333	642,186
Direct tax	1,795,332	1,485,103	475,649	16,080
Internal revenue	.....	37,640,788	109,741,134	249,562,860
Miscellaneous	931,787	3,046,615	47,511,488	24,020,171
Total revenue	51,935,720	111,399,766	260,632,717	344,512,389
Expenditures	474,744,778	714,709,995	865,234,087	1,248,790,997
Excess of expenditures	422,809,058	603,310,229	604,601,370	904,278,608

DEBTS OF THE STATES.

Pennsylvania	$39,379,603	Maine	$5,137,500
Massachusetts	22,893,972	Connecticut	5,000,000
Ohio	13,500,751	Michigan	3,541,129
Illinois	11,178,514	Wisconsin	2,500,000
New York	6,278,954	Vermont	1,642,845

RECEIPTS.

Live stock received at New York for the years 1862, 1863, *and* 1864.

Years.	Beeves.	Milch cows.	Veals.	Sheep & lambs	Swine.
1862	231,402	5,221	36,619	461,105	1,116,044
1863	268,860	6,731	36,122	516,972	1,693,138
1864	268,599	7,573	78,571	796,379	659,954

The following table shows the States from which the beeves have been received:

	1862.	1863	1864.
New York	35,958	28,928	40,202
Illinois	101,742	117,638	93,789
Indiana	16,555	14,040	8,091
Iowa	3,707	8,455	3,606
Virginia	117	85	98
Connecticut	410	460	688
Massachusetts	...	36	348
Wisconsin	...	59	126
Ohio	30,635	19,688	23,288
Kentucky	9,669	7,682	9,245
Michigan	7,225	9,054	12,424
Pennsylvania	1,550	746	940
Missouri	1,729	1,575	2,835
New Jersey	411	195	352
Canada	523	686	2,979
New Hampshire	...	...	11
Kansas	...	...	149

Yearly average prices.

	1862.	1863.	1864.	
Beeves, per pound	$0 07¾	$0 09¼	$0 13	
Cows, per head	34 40	41 00	60 00	
Veals, per pound	05½	06	09½	
Sheep and lambs, per head	4 43	5 89	08	per lb.
Swine, per pound	05	05	12½	

FLOUR AND GRAIN RECEIPTS AT CHICAGO.

Tables showing the receipts of farm products at such centering places as Chicago indicate, usually, the amount of the crops of the country with which its trade is connected. Hence we publish the following table, taken from the New York Shipping and Commercial List.

Flour and grain receipt at Chicago.

	1861.	1862.	1863.	1864.
Flour ..... bbls..	1,446,137	1,663,391	1,474,284	1,141,791
Wheat ..... bush..	17,531,903	13,728,116	11,180,344	11,257,196
Corn ..... do...	26,543,233	29,499,328	25,459,598	13,623,087
Oats ..... do...	1,883,258	4,138,722	9,139,525	13,653,941
Barley ..... do...	417,129	872,053	1,098,346	740,446
Rye ..... do...	479,005	1,038,825	869,760	969,116
Total grain ..... bush..	46,862,534	49,227,044	48,708,483	40,243,786
Add flour into wheat ...do...	7,230,865	8,331,953	7,371,420	5,708,955
Total bushels	54,093,219	57,558,999	56,079,903	48,952,741

FOREIGN STATISTICS.

Imports of breadstuffs into Great Britain for eleven months, from January 1 1864, *to December* 1, 1864.

		1863.	1864.
Wheat:			
From Russia	pounds	465,488,016	527,689,120
Prussia	do	436,602,432	514,413,984
Denmark	do	56,941,248	107,435,328
Mechlenburg	do	41,251,648	69,495,777
Hanse Towns	do	27,972,672	54,240,256
France	do	13,477,744	62,103,664
Turkey, Wallachia, and Moldavia.	do	43,419,376	49,948,192
Egypt	do	249,687,536	41,089,440
United States	do	933,892,960	877,634,240
British North America	do	226,339,568	130,438,224
Other countries	do	50,608,208	45,536,848
Total in pounds		2,545,681,408	2,480,025,073
Total in bushels		42,428,023	41,333,751
Barley	pounds	742,547,680	508,964,176
Oats	do	711,838,176	557,748,352
Peas	do	135,129,792	116,692,464
Beans	do	212,182,096	94,341,744
Indian corn, or maize	do	1,403,225,040	637,910,224
Total		3,204,922,784	1,915,656,960
Wheat meal and flour:			
From Hanse Towns	pounds	30,157,344	34,426,102
France	do	118,683,488	185,864,448
United States	do	277,109,840	194,590,704
British North America	do	93,744,560	52,949,120
Other countries	do	13,010,144	12,684,784
Total in pounds		532,705,376	480,515,158
Indian corn meal		1,079,680	450,128

The average prices for different periods were as follows:

	Week ending Dec. 24, 1864.	Same week in 1863.	For 6 weeks prior to Dec. 24, 1864.
Wheat, per quarter (8 bushels)	$9, 08	$9, 74	$9, 20
Barley, " "	6, 72	7, 94	6, 92
Oats, " "	4, 58	4, 64	4, 74
Rye, " "	7, 28	7, 46	7, 30
Beans, " "	8, 70	8, 44	8, 96
Peas, " "	8, 52	8, 12	8, 44

The wheat crop of France for 1864.

The consul of the United States at Havre (France) writes to this department that an *average* crop of wheat in France is 100,500,000 hectolitres, equal to 284,750,000 bushels, and that the crop of 1864 is 14,666,666 bushels less than this average. Consequently it would be 270,583.334 bushels. This makes the wheat crop of France in 1864 about 109,887,511 bushels greater than that of the loyal States.

The acreage of the wheat lands in France for 1864 is stated by our consul to be 16,415,000 acres, making the average yield per acre 16½ bushels. This is a higher average yield than in this country. We doubt its correctness, and think the *average* wheat crop in France cannot exceed 215,000,000 bushels.

TABLE OF IMMIGRATION.

In the bi-monthly report for September and October we gave the number of emigrants for the year ending September 30, 1864. This number was 189.713.

Through the courtesy of the collectors at the custom-houses of New York and Philadelphia, and of the general agent of immigration at Boston, this department has received the following returns for the quarter embraced in the months of October, November, and December, 1864:

NEW YORK.

	Male.	Female.	Total.
Arrivals during October	9, 252	7, 506	16, 758
Arrivals during November	6, 713	5, 433	12, 146
Arrivals during December	3, 124	2, 333	5, 457
Total for the quarter	19, 089	15, 272	34, 361

PHILADELPHIA.

Arrivals during October	5	
Arrivals during November	8	
Arrivals during December	480	
Total for the quarter		493

BOSTON.

Arrivals during October	986	
Arivals during November	621	
Arrivals during December	343	
Total for the quarter		1, 950
Total immigration		36, 840

METEOROLOGY.

FROM THE SMITHSONIAN INSTITUTION.

DECEMBER, 1864.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain, (in inches and tenths.) for December, 1864, at the following places, as given by the observers named. Daily observations were made at the hours of 7 a. m. and 2 and 9 p. m.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
MAINE.								
				°		°	°	*In.*
North Perry	Washington	Wm. D. Dana	29	43	23	—15	22.5	5.56
Steuben	....do	J. D. Parker	7	45	23	—12	23.9	9.37
Lee	Penobscot	Edwin Pitman	29	47	24	—24	22.6	3.80
West Waterville	Kennebec	B. F. Wilbur	7	48	23	— 9	22.9	3.60
Lisbon	Androscoggin	Asa P. Moore	28	49	23	—11	23.8	4.25
Cornishville	York	G. W. Guptill	7	44	23	—11	23.8	4.87
Cornish	....do	Silas West	1	42	23	—12	22.9	4.68
NEW HAMPSHIRE.								
Shelburne	Coos	F. Odell	27	44	23	—11	23.1	3.42
Stratford	....do	Branch Brown	7	44	23	—19	19.5	5.19
North Barnstead	Belknap	Chas. H. Pitman	.....	.....	23	—10	.....	.....
Claremont	Sullivan	Arthur Chase	7	50	23	—18	25.4	2.97
Do	....do	S. O. Mead	7	52	23	— 7	25.7	.....
VERMONT.								
Lunenburg	Essex	H. A. Cutting	28	46	20, 23	—10	22.6	.....
Craftsbury	Orleans	Jas. A. Paddock	7	43	23	—16	19.5	5.00
Middlebury	Addison	H. A. Sheldon	7	54	23	—14	26.6	3.62
MASSACHUSETTS.								
Sandwich	Barnstable	N. Barrows, M. D.	1, 3	51	23	— 3	33.2	4.41
Topsfield	Essex	A. M. Merriam	7	53	23	— 4	33.4	4.41
Newbury	....do	Jno. H. Caldwell	7	48	23	—10	28.7	.....
New Bedford	Bristol	Sam'l Rodman	7	53	23	0	33.0	4.18
State Lunatic Hosp'l.	Worcester	F. H. Rice	7	53	23	— 4	29.5	3.67
Mendon	....do	Jno. G. Metcalf, M. D.	7	54	23	— 4	24.6	.....
Baldwinsville	....do	Rev. E. Dewhurst	7	48	23	—15	24.3	4.48
Amherst	Hampshire	Prof. E. S. Snell	7	51	23	0	30.2	4.63
Springfield	Hampden	J. Weatherhead	1	52	23	— 5	28.6	4.45
Westfield	....do	Rev. E. Davis	1	51	23	— 2	28.0	4.98
Williams College	Berkshire	Prof. A. Hopkins	7	51	23	— 6	26.6	4.18
Richmond	....do	Wm. Bacon	28	53	23	— 4	25.6	9.67

Table showing the range of the thermometer, &c., for December—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
CONNECTICUT.								
				°		°	°	*In.*
Pomfret	Windham	Rev. D. Hunt	1	49	23	— 1	28.3	6.22
Columbia	Tolland	Wm. H. Yeomans	1	60	23	— 4	31.1	.....
Middletown	Middlesex	Prof. Jno. Johnston	7	55	23	0	31.0	3.99
Colebrook	Litchfield	Charlotte Rockwell	7	52	23	—10	26.0	.....
NEW YORK.								
Moriches	Suffolk	Mrs. and Miss Smith	1	61	23	9	37.0	8.21
South Hartford	Washington	G. M. Ingalsbe	3	48	23	—24	27.6	4.40
Newburg	Orange	James H. Gardiner	1	57	22	10	.....	7.00
Fishkill	Dutchess	Wm. H. Denning	1	54	23	8	30.9	2.70
Garrison's	Putnam	Thos. B. Arden	7	53	23	9	24.6	3.97
White Plains	Westchester	Oliver R. Willis	3	57	23	3	33.7	.....
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	7	58	23	11	37.0	5.88
St. Xavier's College	do	Rev. John Aubier	7	56	22	11	34.7	.....
Flatbush	Kings	Eli T. Mack	1	55	12, 23	10	32.6	4.01
Schenectady	Schenectady	Harmon V. Swart	7	54	23	— 2	28.7	.....
Gouverneur	St. Lawrence	C. H. Russell	3	49	23	—25	25.1	4.29
Clinton	Oneida	Dr. H. M. Paine	7	54	15	0	29.9	2.38
Oneida	Madison	Dr. S. Spooner	7	52	15	1	28.6	4.16
Theresa	Jefferson	S. O. Gregory	3	48	23	—29	23.1	5.18
Oswego	Oswego	Wm. S. Malcolm	3	54	13,22,23	— 7	28.7	4.24
Palermo	do	E. B. Bartlett	3	51	15, 23	0	25.0	5.10
Baldwinsville	Onondaga	John Bowman	3	52	22	3	27.1	.....
Skaneateles	do	W. M. Beauchamp	3	51	23	3	26.4	.....
Nichols	Tioga	Robert Howell	3, 7	54	15, 22	4	30.2	.....
Auburn	Cayuga	John B. Dill	3	56	8, 22, 23	8	28.2	.....
Palmyra	Wayne	Stephen Hyde	3	55	8	13	33.2	.....
Geneva	Ontario	Rev. W. D. Wilson	3	59	22	6	28.9	1.45
Rochester	Monroe	Prof. C. Dewey	3	54	23	7	28.7	4.82
Wilson	Niagara	Dr. E. S. Holmes	27	50	8, 22	9	27.6	.....
Buffalo	Erie	Wm. Ives	3	50	8, 15	6	28.5	4.78
Jamestown	Chautauqua	Rev. S. W. Roe, M.D.	2	52	11	2	25.9	6.00
NEW JERSEY.								
Paterson	Passaic	Wm. Brooks	1	56	12	6	33.3	2.37
Newark	Essex	W. A. Whitehead	1	56	23	5	32.7	4.76
New Brunswick	Middlesex	G. W. Thompson	7	58	23	8	33.1	.....
Burlington	Burlington	John C. Deacon	7	58	12	8	33.6	3.90
Mount Holly	do	M. J. Rhees, M. D.	3, 7	59	12	14	35.4	.....
Progress	do	Thos. J. Beans	1	54	12, 13	11	33.4	5.17
Haddonfield	Camden	Jas. S. Lippincott	7	62	23	14	35.0	5.24
Greenwich	Cumberland	R. C. Sheppard	3	60	12, 23	16	35.7	3.84
PENNSYLVANIA.								
Fallsington	Bucks	Ebenezer Hance	1	59	23	10	35.0	4.30
Philadelphia	Philadelphia	Pf. J. A. Kirkpatrick	7	59	12	12	35.8	4.75
Germantown	do	Thos. Meehan	1, 4	51	23	7	.....	.....
Mooreland	Montgomery	Anna Spencer	1	55	23	8	32.9	2.59
Nazareth	Northampton	L. E. Ricksecker	1	54	23	2	31.2	.....

Table showing the range of the thermometer, &c., for December—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
PENNSYLVANIA—C'd.				°		°	°	*In.*
North Whitehall	Lehigh	Edward Kohler	1	52	15, 23	2	32.3	2.15
West Chester	Chester	T. H. Aldrich	1	61	12	8	34.9	.....
Silver Spring	Lancaster	H. G. Bruckhart	7	56	25	8	33.3	.....
Mountjoy	....do	J. R. Hoffer	3	58	12	10	35.9	4.00
Berwick	Columbia	John Eggert	7	55	23	6	33.3	1.43
Harrisburg	Dauphin	Dr. John Heisely	1	53	12	15	38.7	3.26
Tioga	Tioga	E. T. Bentley	7	53	9, 15	2	29.7	2.60
Gettysburg	Adams	M. and H. E. Jacobs	1	56	25	6	31.1	3.42
Fleming	Center	Samuel Brugger	2, 7	50	9	3	28.6	3.14
Pennsville	Clearfield	Elisha Fenton	3	55	9	4	26.8	5.02
Blairsville	Indiana	W. R. Boyers	16	40	12	— 5	24.6	3.08
Connellsville	Fayette	John Taylor	2	60	9	1	32.4	.....
Canonsburg	Washington	Rev. W. Smith, D.D.	7	56	9	3	29.7	3.76
DELAWARE.								
Wilmington	New Castle	U. D. Hedges, M. D.	1	56	12	10	36.4	7.45
MARYLAND.								
Annapolis	Anne Arundel	Wm. R. Goodman	7	60	12	14	38.0	4.83
Oakland	Howard	Philip Tabb	1, 3	56	23	6	33.5	.....
Sykesville	Carroll	Miss H. M. Baer	3, 7	55	9, 12	10	30.1	3.55
DIST. OF COLUMBIA.								
Washington	Washington	Smithsonian Instit'n	1, 3	57	9, 12, 23	18	36.3	3.00
SOUTH CAROLINA.								
Hilton Head	Beaufort	Capt. C. R. Suter	3	75	23	25	54.0	1.98
Beaufort	....do	M. M. Marsh, M. D.	17	78	12	23	53.5	1.58
KENTUCKY.								
Louisville	Jefferson	Mrs. L. Young	2	60	12	— 1	33.3	5.18
OHIO.								
Saybrook	Ashtabula	Jas. B. Fraser	2, 3	55	11	1	28.0	2.70
Austinburg	....do	E. D. Winchester	2	54	11	2	30.0	2.90
East Fairfield	Columbiana	S. B. McMillan	2	54	12	8	29.2	4.53
New Lisbon	....do	J. F. Benner	2	60	11	2	31.7	2.32
Steubenville	Jefferson	R. Marsh	.....	60	.....	6	31.9	3.52
Welshfield	Geauga	B. F. Abell, A. M	2	60	8	7	27.9	5.22
Milnersville	Guernsey	Rev. D. Thompson	2	60	23	3	29.3	3.66
Cleveland	Cuyahoga	Mr. and Mrs. G. A. Hyde.	2	56	8, 9, 23	12	30.1	2.72
Cuyahoga Falls	Summit	D. M. Rankin	2	53	11	— 3	26.2	.....
Wooster	Wayne	Martin Winger	2	56	11	— 1	27.9	.....
Smithville	...do	J. H. Myers	2	54	11	0	28.7	.....
Gallipolis	Gallia	A. P. Rodgers	7	65	23	8	34.2	4.34
Kelley's Island	Erie	Geo. C. Huntington	2	56	23	7	28.7	2.10
Norwalk	Huron	Rev. A. Newton	2	58	11	2	28.0	1.13
Westerville	Franklin	Pf. H. A. Thompson	2	55	23	— 5	28.2	2.24

Table showing the range of the thermometer, &c., for December—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
OHIO—Continued.								
				°		°	°	*In.*
Kingston	Ross	Pf. John Haywood	3	59	11	4	31.5	3.76
Portsmouth	Scioto	L. Engelbrecht	3	64	11	9	34.3	4.35
Urbana University	Champaign	Pf. M. G. Williams	2	57	23	— 4	27.7	3.64
Ripley	Brown	Dr. G. Bambach	2	60	12	5	34.8	5.31
Bethel	Clermont	Geo. W. Crane	6, 7	53	11, 23	0	31.3	6.30
Eaton	Preble	Miss Ollitippa Larsh	2	56	12, 23	— 6	26.4	3.19
College Hill	Hamilton	John W. Hammitt	2	55	23	— 3	29.2	.....
Do	do	Isaiah H. Wilson	3	60	23	0	31.4	5.15
Cincinnati	do	R. C. Phillips	2	60	12	9	35.8	3.15
Do	do	George W. Harper	2	58	12	1	33.0	2.94
MICHIGAN.								
Pontiac	Oakland	James A. Weeks	2	52	9	— 8	26.2	.....
Monroe	Monroe	Miss F. E. Whelpley	2	50	8, 9	0	26.9	2.33
State Agric'l College	Ingham	Prof. R. C. Kedzie	2	51	9	—17	24.4	3.20
Garlick	Ontonagon	Edwin Ellis	1	42	8	— 8	.....	.....
INDIANA.								
Vevay	Switzerland	Chas. G. Boerner	2	58	12	5	35.4	.....
Pennville	Jay	Miriam Griest	7	46	23	—16	21.5	1.25
New Castle	Henry	T. B. Redding, A. M.	2	58	23	—10	26.2	3.15
South Bend	St. Joseph	Reuben Burroughs	3	56	9	—17	23.5	4.85
Indianapolis	Marion	W. W. Butterfield	2	60	12, 23	— 3	27.5	.....
Do	do	R. Mayhew	2	60	12	— 5	27.7	3.42
New Harmony	Posey	John Chappellsmith	2	67	23	0	31.9	3.42
ILLINOIS.								
Chicago	Cook	Samuel Brookes	2	58	8	—20	18.2	.....
Evanston	do	A. D. Langworthy	.....	.....	8	—13	.....	.....
Riley	McHenry	E. Babcock	2	53	9	—24	19.2	2.56
Sandwich	DeKalb	Dr. N. E. Ballou	2	57	8	—22	19.3	2.25
Clinton	DeWitt	C. H. Moore	.....	.....	22	—10	.....	.....
Ottawa	La Salle	Mrs. E. H. Merwin	2	63	9	—23	18.7	3.49
Winnebago	Winnebago	James W. Tolman	2	56	9	—20	17.2	2.76
Tiskilwa	Bureau	Verry Aldrich	2	58	9	—13	21.8	.....
Wyanet	do	Mr. and Miss Phelps	2	62	9	—20	21.1	3.89
Hennepin	Putnam	Smiley Shepherd	2	57	9	—20	20.0	.....
Peoria	Peoria	Frederick Brendel	2	67	8	— 6	25.6	3.06
Elmore	do	W. H. Adams	.....	.....	.....	.....	.....	4.12
Pekin	Tazewell	J. H. Riblett	2	67	9, 22	— 8	24.3	2.73
Hoyleston	Washington	J. Ellsworth	2	70	12	— 3	30.0	3.30
Waverly	Morgan	Timothy Dudley	2	70	22	— 6	26.2	2.75
Galesburg	Knox	Rev. W. Livingston	2	64	8, 9	—13	22.4	4.58
Manchester	Scott	Dr. and Miss Grant	2	66	11, 22	— 2	26.5	1.94
Augusta	Hancock	S. B. Mead, M. D.	2	65	8, 11, 22	— 7	22.7	3.55
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lüps	2	48	8, 9	—16	22.4	1.85
Milwaukee	Milwaukee	I. A. Lapham, LL.D.	2	53	8	—15	20.1	1.99
Green Bay	Brown	Friedrich Deckner	1	49	9	—16	18.0	2.17

Table showing the range of the thermometer, &c., for December—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
WISCONSIN—Cont'd.				°		°	°	*In.*
Geneva	Walworth	William H. Whiting	2	56	9	—19	17.6	.....
Delavan	do	Leveus Eddy	2	55	8, 9	—21	17.5	2.39
Waupacca	Waupacca	H. C. Mead	1	49	8	—20	18.8	.....
Embarrass	do	Edward E. Breed	1, 2	42	8, 9	—18	17.9	2.25
Beloit	Rock	Henry D. Porter	1	50	9	—22	16.5	1.90
MINNESOTA.								
Beaver Bay	Lake	C. Wieland	1	40	8	—21	12.3	0.64
St. Paul	Ramsey	Rev. A. B. Paterson	1	46	14	—24	12.0	0.71
Minneapolis	Hennepin	Wm. Cheney	1	50	8	—24	11.0	.....
New Ulm	Brown	Charles Roos	1	47	8, 22	—23	9.8	1.08
IOWA.								
Lyons	Clinton	Dr. P. J. Farnsworth	2	52	8	—16	18.2	5.30
Muscatine	Muscatine	J. P. Walton	2	55	8	—20	18.5	2.12
Dubuque	Dubuque	Asa Horr, M. D	2	52	8	—19	17.4	1.82
Guttenberg	Clayton	Philip Dorweiler	2	50	9	—18	15.8	2.72
Monticello	Jones	Chauncey Mead	2	52	9	—29	17.5	1.83
Independence	Buchanan	A. C. Wheaton	2	51	8	—25	14.7	2.05
Do	do	D. S. Deering	2	51	14	—16	17.5	.....
Mount Vernon	Linn	Prof. A. Collins	1	53	8	—17	16.6	.....
Iowa City	Johnson	Theo. S. Parvin, A.M.	2	54	8	—14	19.3	2.03
Mount Pleasant	Henry	Rev. E. L. Briggs	2	62	8	—16	19.9	2.20
Fort Madison	Lee	Daniel McCready	2	63	8	—12	21.6	2.72
Waterloo	Black Hawk	T. Steed	2	50	14	—18	17.2	.....
Iowa Falls	Hardin	N. Townsend	2	47	.....	.....	.....	.....
Algona	Kossuth	Dr. and Miss McCoy	1, 2, 26	40	8, 22	—18	13.4	0.13
MISSOURI.								
Allenton	St. Louis	Aug. Fendler	2	61	23	—10	28.2	1.63
Athens	Clark	J. T. Caldwell	25	58	11	— 8	.....	2.10
Canton	Lewis	George P. Ray	2	63	8, 22	— 8	23.2	4.06
Harrisonville	Cass	John Christian	1, 2	56	22	— 8	24.6	2.25
Easton	Buchanan	P. B. Sibley	2	53	11	—11	21.9	0.94
KANSAS.								
State Agric'l College	Riley	Henry L. Denison	1	58	11	— 6	28.0	1.11
Fort Riley	Davis	James H. Pine	1	68	11	— 3	28.2	.....
NEBRASKA TER.								
Bellevue	Sarpy	Rev. Wm. Hamilton	1	50	8	—14	19.9	0.34
Addenda—Nov., 1864.								
St. George	Washington	H. Pearce	14, 15	77	19	28	55.3	1.03

Table showing the average temperature and fall of rain (in inches and tenths) for the month of December in each year named, and for the five years first named, collectively, with the average number of places in each State in which the observations were made.

States and Territories.	Av. number of places.	Averages, 1855.		Averages, 1856.		Averages, 1857.		Averages, 1858.		Averages, 1859.		Av. for five years.		Averages, 1863.		Averages, 1864.	
		Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.
		Deg.	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*
Maine	6	25.7	4.5	20.5	3.8	26.5	4.6	19.8	3.1	16.5	5.9	21.8	4.4	21.7	3.9	23.2	5.2
New Hampshire	4	26.8	5.4	17.7	3.1	28.7	4.3	17.7	2.9	17.7	4.5	21.7	4.0	17.3	3.5	23.4	3.9
Vermont	4	24.6	2.5	16.9	2.3	27.1	3.4	19.4	2.4	16.3	2.9	20.9	2.7	21.5	4.2	24.3	4.3
Massachusetts	12	30.3	5.8	24.6	4.2	33.0	5.2	29.1	3.8	25.1	5.0	28.4	4.8	26.9	4.4	28.8	4.9
Rhode Island	1	32.2	6.1	25.5	5.8	34.6	5.2	32.1	3.5	28.4	3.5	30.5	4.8	28.5	5.7	.....	.....
Connecticut	5	32.0	6.3	26.8	5.9	38.2	6.8	29.2	3.7	25.6	3.5	30.3	5.2	27.8	5.1	29.1	5.1
New York	18	29.1	3.5	25.1	3.4	33.1	4.0	29.2	3.3	23.5	3.9	28.0	3.6	28.7	3.8	29.3	4.6
New Jersey	4	34.3	5.1	30.9	3.6	35.9	5.4	34.0	4.2	30.8	4.3	33.1	4.5	31.4	4.4	34.0	4.2
Pennsylvania	20	30.7	4.9	28.4	2.9	36.6	4.9	34.8	1.5	29.1	4.0	31.9	3.6	34.7	4.4	32.1	3.4
Delaware	1	.....	.....	34.5	.....	43.7	4.7	43.0	6.4	.....	3.6	40.4	4.9	37.2	4.0	36.4	7.5
Maryland	5	35.4	1.1	31.2	2.8	38.8	6.0	38.1	4.0	33.4	3.7	35.4	3.5	35.3	4.4	33.9	4.2
District of Columbia	1	37.1	3.2	31.8	2.3	.....	5.5	39.9	5.8	34.6	6.2	35.8	4.6	35.4	3.7	36.3	3.0
South Carolina	4	49.7	6.1	46.6	3.4	54.0	4.7	54.7	3.4	49.7	3.2	50.9	4.2	.....	.....	53.8	1.8
Tennessee	1	38.1	2.3	31.2	5.1	46.6	5.3	46.1	8.5	35.2	6.6	39.4	5.5	40.0	8.6	.....	.....
Kentucky	4	36.4	3.3	30.2	4.5	42.4	5.8	43.4	7.9	30.5	6.6	36.6	5.6	38.9	4.5	33.3	5.2
Ohio	20	31.6	3.7	24.7	3.3	37.1	3.5	36.7	5.1	25.6	4.3	31.1	4.0	35.0	4.2	30.2	3.7
Michigan	8	25.5	3.5	21.0	3.3	31.5	1.7	30.1	2.1	20.0	2.5	25.6	2.6	31.9	1.1	25.8	2.8
Indiana	4	31.7	2.5	28.8	3.3	37.4	2.2	39.2	6.0	26.8	4.3	32.8	3.6	34.9	3.8	27.7	3.2
Illinois	14	26.6	3.6	22.0	4.2	34.7	1.4	30.6	3.0	18.1	1.6	26.4	2.8	29.9	5.5	22.2	3.2
Wisconsin	10	19.5	2.2	15.6	4.1	29.9	2.3	24.0	2.0	14.0	0.9	20.6	2.3	27.6	4.6	18.6	2.1
Minnesota	4	9.9	1.3	4.9	.....	23.4	1.4	14.7	1.3	5.9	0.6	11.8	1.2	20.6	1.3	11.3	0.8
Iowa	7	20.2	2.1	15.2	4.5	31.4	1.3	23.9	1.9	15.2	0.6	21.2	2.1	25.9	5.5	17.5	2.3
Missouri	3	32.1	3.1	29.8	4.3	40.0	2.6	38.3	8.5	24.5	2.4	32.9	4.2	31.1	5.3	24.5	3.0
Nebraska Territory	3	.....	.....	.....	.....	32.1	0.8	20.1	0.9	15.0	0.5	22.6	0.7	21.9	3.4	19.9	0.3
Kansas	3	.....	.....	.....	.....	37.8	0.2	29.9	1.2	21.9	0.2	29.9	0.5	27.8	4.0	28.1	1.1
California	3	.....	0.0	43.9	2.4	49.6	2.5	45.6	5.5	45.8	2.9	46.2	2.6	44.2	3.5	.....	.....

There was very little clear weather in December, and at many places it rained or snowed on more than half the days of the month. The two heaviest storms were about the 10th and 21st. They both prevailed from Iowa, or further west, to the Atlantic coast.

NOTES OF THE WEATHER.

Lisbon, Maine.—December 13.—Sabbati's stream freezes so as to bear man· 23d, mail-carrier crosses the Androscoggin with horse.

Lee, Maine.—December 10, 11.—Wild geese going south.

Shelburne, New Hampshire.—December 1.—Farmers ploughing. 9th, considerable anchor ice in the river; the first time there has been much. 13th, Androscoggin river closed. 19th, ground frozen to the depth of twelve inches, measured. 23d, saw a man who had not travelled over forty rods, and had his nose frozen.

Claremont, New Hampshire.—December 27, 28.—Heavy and curious fog covered the earth, followed by rain, under both of which the snow rapidly vanished, leaving the sleighing thin and poor.

Lunenburg, Vermont.—December 21.—We are having a great blow, snow drifting badly, the river and pond closed. 15th, swift water not yet frozen. 31st, roads in bad condition; bare of snow in spots, and full of holes.

Baldwinsville, Massachusetts.—December 21.—Wind blew furiously this afternoon and evening; snowed all day. Barometer very low, falling nearly an inch from 7 a. m. to 2 p. m.

Mendon, Massachusetts.—Good sleighing from the 12th to the end of the month; all the snows came moist, so there were no drifts.

Topsfield, Massachusetts.—December 31.—The month has been very stormy. There are now seven inches of snow, and the ground is frozen to the depth of three-quarters of an inch.

New Bedford, Massachusetts.—December 23.—River frozen north of the bridge. 27th, ice in the river broken up. 31st, no ice in the river; very little frost in the ground.

Sandwich, Massachusetts.—December 31.—Sandwich pond froze over on the night of the 12th, and still remains frozen. There has been no sleighing this month, the snow in all cases having turned to rain, or melted almost as soon as it had fallen.

Middletown, Connecticut.—December 12.—Sleighs moving freely. 13th, Connecticut river closed with ice.

Skaneateles, New York.—December 3.—Tornado from west by south at 3 p. m., lasted not over five minutes; in half an hour another came from the same direction; appeared to be less than half a mile in breadth. 10th, five inches of very dry snow fell last night. 22d, lake frozen a considerable distance up. 31st, snow fell on eighteen days this month.

Moriches, New York.—December 17.—At 9 p. m. the sky was entirely clear, but in a few minutes I was suddenly prevented by clouds from making telescopic observations. It was the most sudden change from an entirely clear sky to an entirely cloudy one that I remember to have ever noticed.

South Trenton, New York.—December 4.—Ground not frozen; many are ploughing. 12th, ground frozen hard. 29th, ground frozen four inches deep. 31st, snow eleven inches on the level.

Nichols, New York.—December 23.—Susquehanna river closed with ice.

Theresa, New York.—December 8.—The ground froze. 12th, river frozen over.

Garrison's, New York.—December 31.—The month has been remarkably wet. Snow has continued to cover the ground since the first fall on the 11th; and the ground being but slightly frozen at that time, the frost has not gone any depth worth naming. The river still continues open at this point.

Progress, New Jersey.—December 9, 10.—First snow-storm of the season. 15th, Rancocus river closed by ice; opened on the 19th. Delaware river obstructed by ice on the 15th; a few steam-tugs force their way through. Delaware river frozen over at this place on the night of the 23d; broke up the 26th.

Burlington, New Jersey.—December 31.—The ground has not been frozen more than three inches deep, being protected by the snow. The warmth of the 28th and 29th took all the frost out of the ground. It froze moderately on the night of the 29th, and is now covered by a snow of some six inches in depth.

Passaic Valley, New Jersey.—December 13.—Temperature of a spring near the Passaic river, and which is covered by the river after heavy rains, 49°; temperature of the atmosphere at the same time 18°.

Germantown, Pennsylvania.—December 31.—The ground has been covered with snow since the 10th, thus keeping the ground unfrozen, and it is now quite free from frost.

Byberry, Pennsylvania.—December 9.—Ground frozen hard; ice frozen on ponds hard enough to bear. 14th, ice three inches thick.

Tioga, Pennsylvania.—December 15.—River frozen over.

Philadelphia, Pennsylvania.—The ground was covered with snow from the night of the 9th of December until the 7th of January, 1865, a period of four weeks—very long for Philadelphia.

Fallsington, Pennsylvania.—December 12.—Delaware river closed first time this winter at Trenton, New Jersey. 18th, river broke up. 23d, Delaware closed the second time at Trenton; broke up the 28th.

Horsham, Pennsylvania.—Quite a heavy snow fell on the night of December 10—about three inches—the first of the season, and unusually late to have had none.

Fleming, Pennsylvania.—December 9.—Bald Eagle creek is freezing over for the first time this season.

Beaufort, South Carolina.—All the early part of the month excessive dews; eaves dripping as if from rain; on the 3d, at 9 a. m., window blinds of veranda, twelve feet under a roof, dripping freely. December 8, thermometer at 2 p. m., in shade, on south veranda, at 88°. 10th, lightning in the west. 27th, lightning northwest from a cloudless sky. 28th, lightning throughout the heavens at 3 and 4 a. m.

Hilton Head, South Carolina.—December 12.—Ice an inch and a quarter thick frozen over pail of water in open air. 27th, in evening diffused and distant lightning. 28th, shower in forenoon, accompanied with quite heavy thunder and lightning.

Portsmouth, Ohio.—December 12.—Ice coming out of Scioto river in large cakes; some ice in Ohio river. 19, 20, river rising very fast. 21, snow, sleet, frozen rain and hail; heavy winds; river very rough; some damage to shipping; tow-path covered; barometer at 7 a. m. lowest since in my possession—four years. 22d, river falling; steamboats compelled to lay over on account of storm and high water. 26th, ice running out of Scioto river. 31st, Cloudiness prevailed during this month more than any I have on record.

Cleveland, Ohio.—December 12.—Canal froze over. 13th, river froze over.

Urbana, Ohio.—December 16.—Ice five inches. 24th, ice six inches. 26th, snow off, covered the ground four days.

Cincinnati, Ohio.—December 16.—Darkest afternoon I ever witnessed.

Kelley's Island, Ohio.—December 20.—No lights in light-houses; considerable ice in lake; navigation has been virtually closed for about a week. Schooner Zouave came from Sandusky on the 10th, and went to Put-in bay, and could not get out, and is now frozen in there. 31st, there has been a greater amount of cloudiness the past month than in any month for five years.

Indianapolis, Indiana.—December 8.—Temperature of the air, six feet above the surface of the earth, at 7 a. m., 11°; temperature of water in a well, 49°; temperature of air at the surface of the water, 45°. Depth of well to surface of water, 19 feet 3 inches; depth of water, 2 feet.—*Butterfield.*

Indianapolis, Indiana.—December 2.—Lightning south and southwest from 8 to 9 p. m. Average temperature of December, 1861, 35°.57; 1862, 36°.71; 1863, 34°.53; 1864, 27°.70. Amount of rain December, 1861, 1.96 inches; 1862, 5.74 inches; 1863, 3.14 inches; 1864, 3.42 inches.—*Mayhew.*

Penville, Indiana.—December 2.—Thunder-storm at 9 p. m.; vivid lightning at the southwest.

Winnebago, Illinois.—December 2.—Lightning in the east and southeast, below the horizon, from 7 to 8 p. m.

Clinton, Illinois.—December 2.—Bright zigzag lightning in the southeast at 7 p. m.

Ottawa, Illinois.—December 4.—Wild geese flying eastward this morning.

Allenton, Missouri.—December 2.—Thunder and lightning from 2.25 to 2.35 p. m.

Athens, Missouri.—December 1.—Heavy clouds hanging in the northwest; quite sharp lightning and heavy thunder for the season of the year, from morning till noon, 26th, fog from 5 to 10 a. m.; the heaviest fog for some years, and rather uncommon at this season of the year in this country.

Harrisonville, Missouri.—December 1.—Distant thunder, and diffuse lightning south at 6½ p. m., thunder and diffuse lightning SW.; between 8 and 9 p. m.; a very heavy peal of thunder south at 9 p. m., and heavy shower of rain; heavy peals of thunder overhead at 10 p. m., in about half an hour moved NW. and died away distant.

Manitowoc, Wisconsin.—December 7.—Manitowoc river closed again.

Milwaukee, Wisconsin.—December 8.—Milwaukee river closed with ice.

Muscatine, Iowa.—December 1.—Steamer R. P. Converse passed down the Mississippi river to-day. 9th, Ice stopped running. 12th, A team crossed the river on the ice. 31st, Ice fifteen inches on the channel. From six to twelve inches of frost in the ground.

Dubuque, Iowa.—December 8.—Mississippi river closed with ice.

Spring Grove, Iowa.—December 1.—The ice is all out of Iowa river, and frost out of the ground.

Lyons, Iowa.—Lightning at the southeast at 8 p. m.; no cloud in sight. 8th, The Mississippi river frozen over this morning. 9th, Crossing on the ice.

Manhattan, Kansas.—December 1.—Lightning in the east and south from 4.30 to 5 p. m., and at 9 p. m.

Bellevue, Nebraska.—December 2.—The last boat went down the Missouri river. The river was closed for a few days in November, and one boat came up after it opened.

New Ulm, Minnesota.—December 7.—Minnesota river frozen fast for teams to cross safely. December 31.—All snow disappeared except in shaded places.

RAIN.

Depth of rain and melted snow collected in the rain gauge kept by the Winnipiseogee Lake Cotton and Woollen Manufacturing Company at the outlet of Lake Winnipiseogee, in the town of Laconia, New Hampshire.

Month.	1860.	1861.	1862.	1863.	1864.
	Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*
January	.70	4.97	6.37	5.24	2.83
February	3.62	2.53	3.97	3.72	1.77
March	2.09	2.69	4.99	5.60	4.01
April	1.35	2.86	2.05	4.20	3.41
May	1.94	4.15	2.57	2.42	2.86
June	3.86	2.09	4.41	1.39	.51
July	5.05	3.70	3.19	8.16	.98
August	4.24	1.86	4.67	4.56	4.73
September	4.63	3.71	3.65	2.93	2.89
October	3.28	5.19	4.42	3.74	3.97
November	5.74	4.99	6.08	4.98	5.63
December	3.93	2.72	2.90	5.41	4.61
Total	40.43	41.46	49.27	52.35	38.23